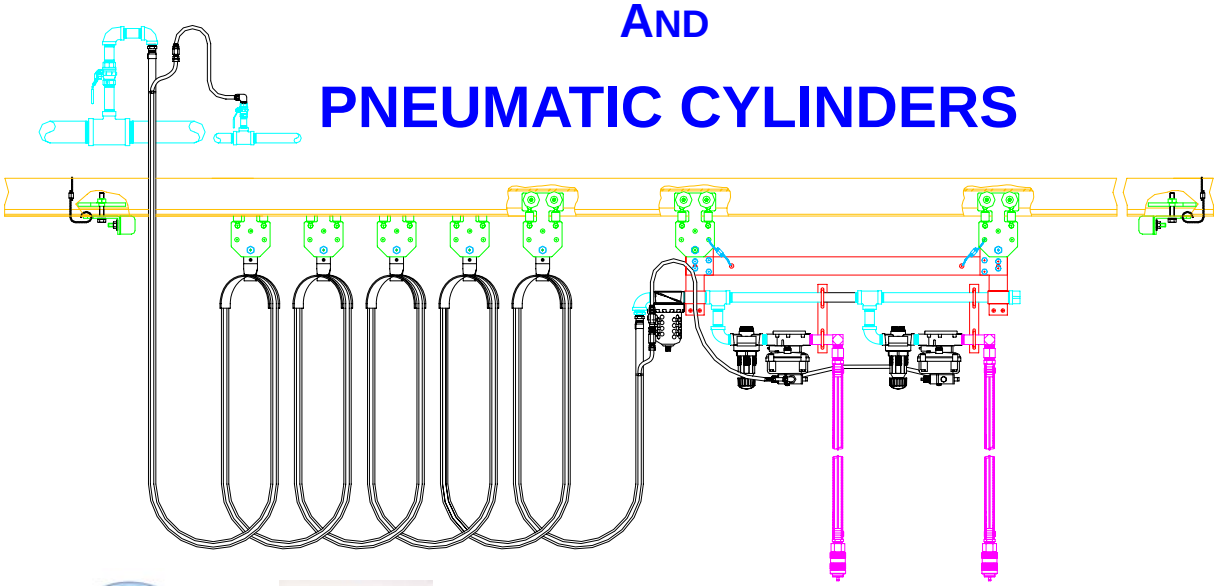
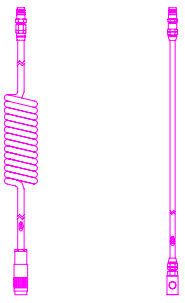
ACUMEN TECHNOLOGIES, INC.

51445 Celeste Drive • Shelby Township, MI 48315
(586) 566-8600 • Fax (586) 566-4062

Precision Lubrication by ACUMEN

LUBRICATION SYSTEMS FOR
POWER TOOLS, HOISTS, AIR MOTORS
AND
PNEUMATIC CYLINDERS





Visit us on the web at:
www.acumen-tech.com

Clifford S. Willner, President

All of the employees here at Acumen Technologies, Inc. work together as a team and as individuals to provide the highest level of customer service and the most advanced products we can offer. Attitude is an important factor in this equation. When attitude is right, great things will happen !

Company Profile

Acumen Technologies, Inc. was established in November, 1997. We began as a group dedicated to the manufacture of high quality, precision fluid delivery systems. Our employees have extensive experience in this discipline and are driven to be the finest supplier of these systems in the world.

Acumen Technologies, Inc. has a distributor network where strategically located, technically trained personnel are available to provide field support for the products we offer.

There exists countless applications in these industries where Acumen Technologies,Inc. either has, or is developing, solutions to manufacturing problems. Acumen's product offering solves fluid delivery and lubrication problems in such areas as:

- Mechanical and motion control devices - air motors, power tools,actuators
- Conveyors / Chain
- Assembly Systems
- High Speed Spindles

It is our mandate to deliver the proper amount of fluid, where it is required, when it is required, every time it is required. It is imperative that the products we offer satisfy current industry needs, and that we remain focused on the identification of opportunities for the future. Engineered solutions to process and manufacturing problems, in the arena of fluid delivery, is our foundation.

Manufacturing Facility

Our plant is located in Shelby Township, Michigan. While we have the ability to expand, we currently utilize 10,750 square feet of a modern,six-year-old facility approximately twenty-five miles northeast of Detroit. Here we produce fluid delivery systems satisfying the requirements of numerous markets including Automotive, Textile, Product Assembly, Food Processing, Primary Metals, Plastics, Power Generation ……..and more.

ACUMEN TECHNOLOGIES, INC.

DEDICATED TO SOLVING PROBLEMS PREVALENT THROUGHOUT INDUSTRY BY THE EFFECTIVE UTILIZATION OF SINGLE POINT INJECTION LUBRICATION.

FEATURES:

USE UP TO 90% LESS OIL

DELIVER OIL PRECISELY WHERE REQUIRED

EASILY MAINTAINED

PREFERRED BY OPERATORS

BENEFITS:

TOOLS AND EQUIPMENT RUN BETTER

TOOLS AND EQUIPMENT LAST LONGER

TORQUE CONSISTENCY

BETTER HOUSEKEEPING

REDUCED OIL CONSUMPTION AND WASTE

WE PROVIDE:

COMPLETE SYSTEMS

IN-HOUSE TRAINING

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ACUMEN TECHNOLOGIES, INC.

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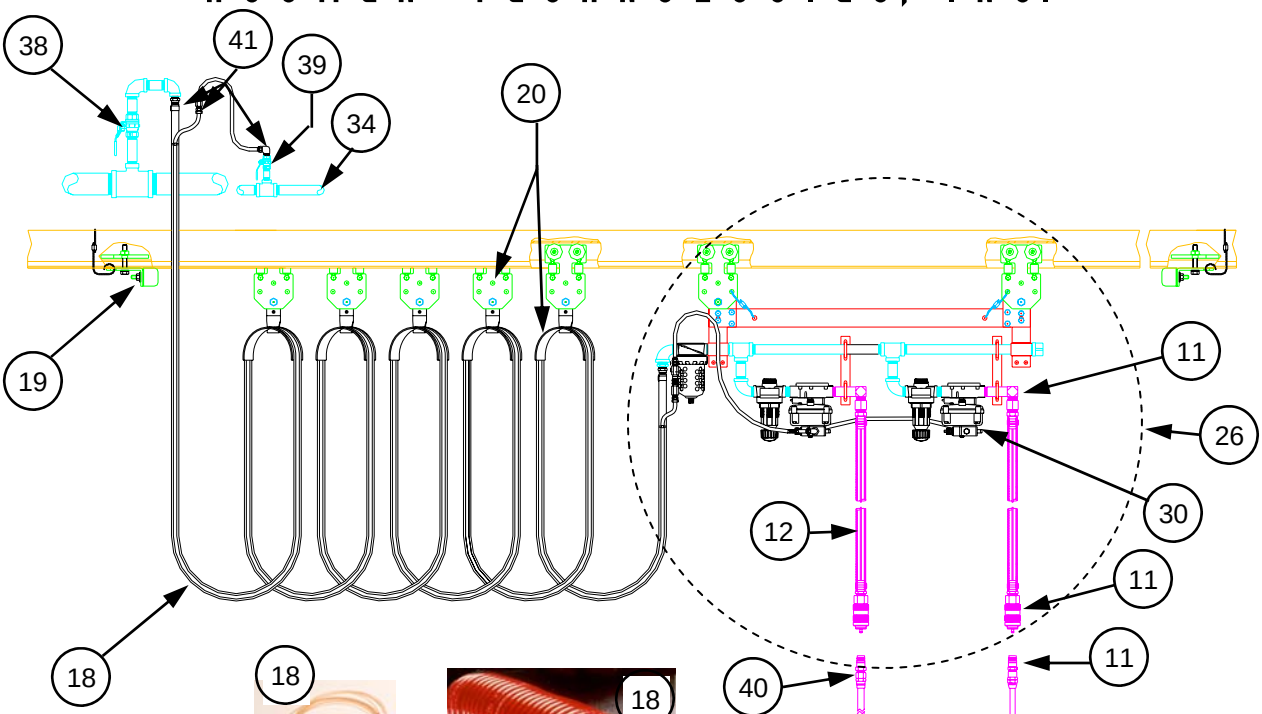
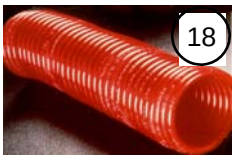
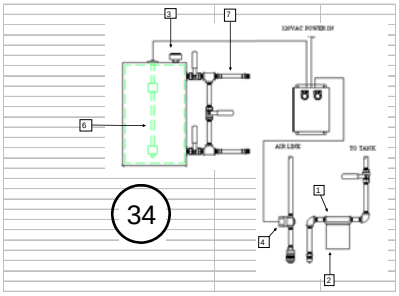
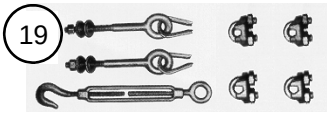
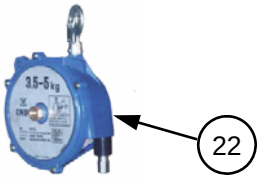
ACUMEN TECHNOLOGIES, INC.

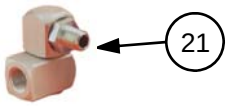


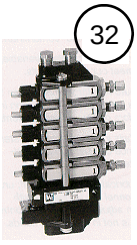












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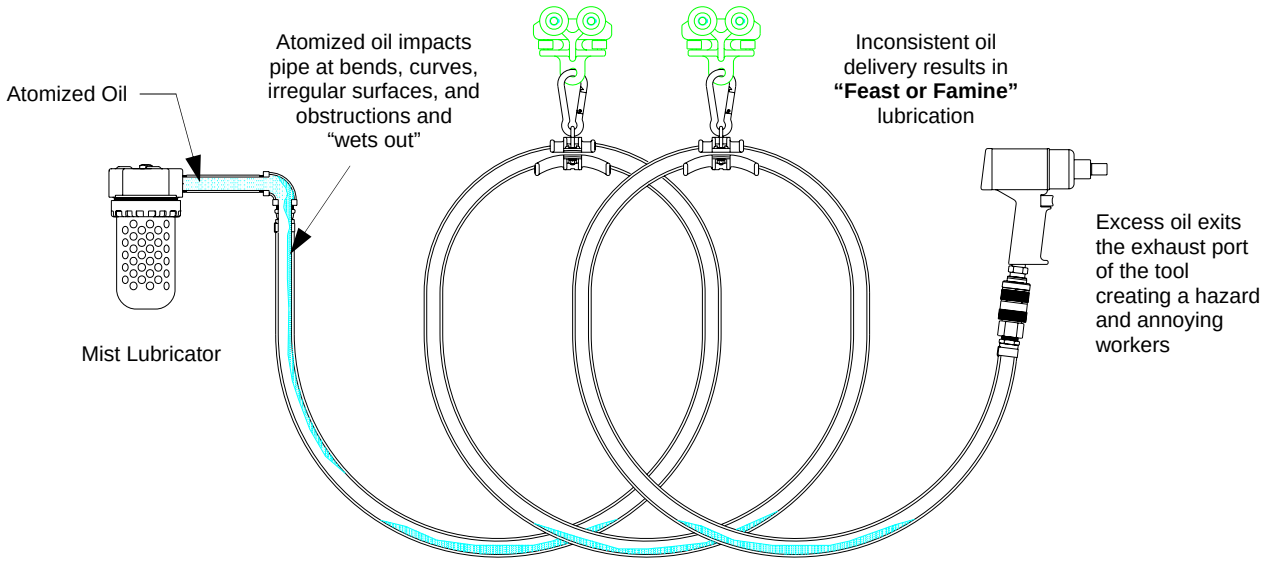
ACUMEN TECHNOLOGIES, INC.

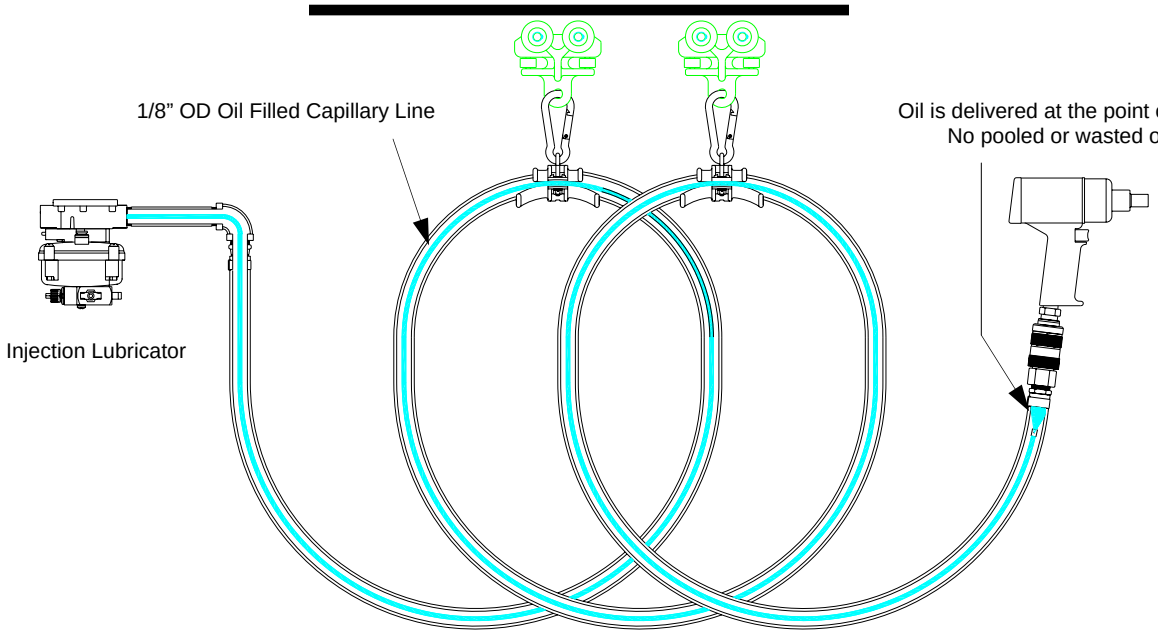
PNEUMATIC TOOL LUBRICATION

CONVENTIONAL “MIST” METHOD


Atomized Oil
Atomized oil impacts pipe at bends, curves, irregular surfaces, and obstructions and “wets out”
Inconsistent oil delivery results in **“Feast or Famine”** lubrication
Excess oil exits the exhaust port of the tool creating a hazard and annoying workers
Mist Lubricator

Oil pools in the low spots until air pushes it out in large slugs

ACUMEN’S “INJECTION” METHOD

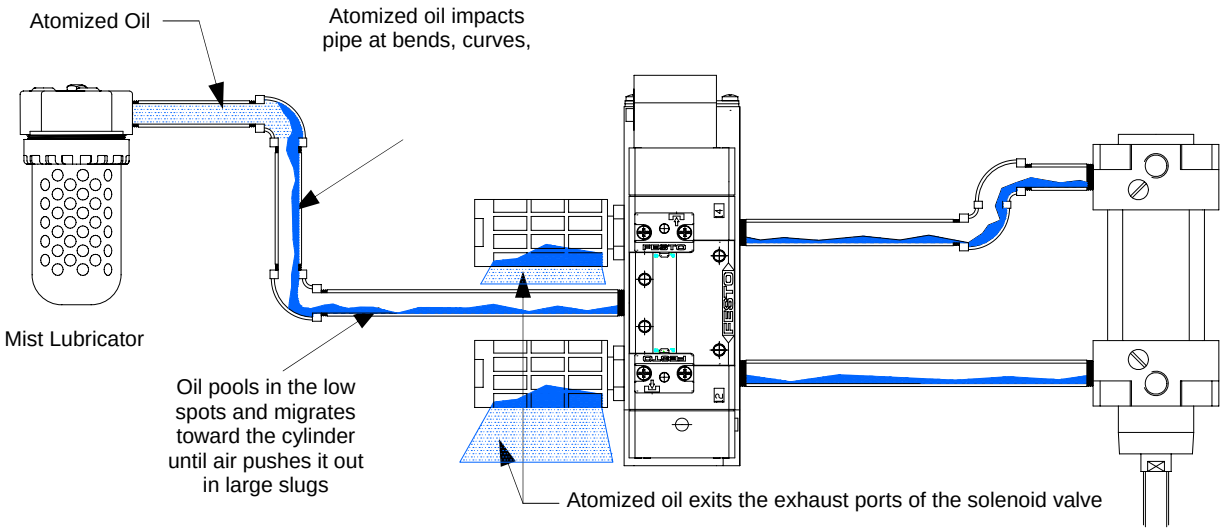


Consistant lubrication results in consistant torque and tool performance

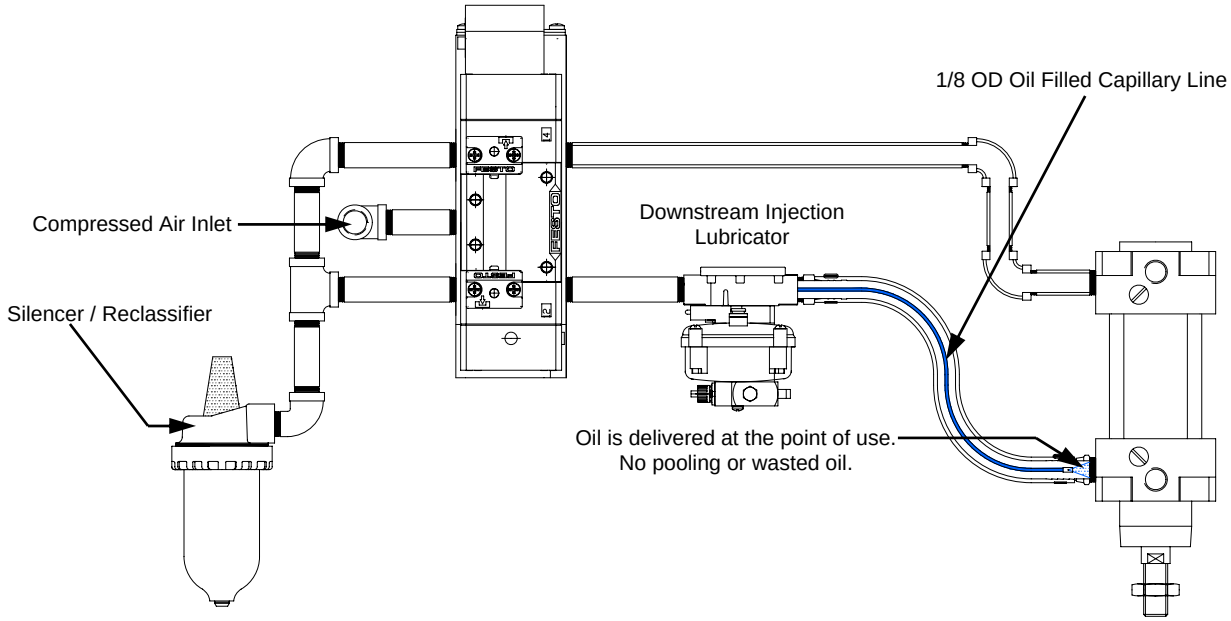
ACUMEN TECHNOLOGIES, INC.

CYLINDER LUBRICATION

CONVENTIONAL "MIST" METHOD


Atomized Oil
Atomized oil impacts pipe at bends, curves,
Mist Lubricator
Oil pools in the low spots and migrates toward the cylinder until air pushes it out in large slugs
Atomized oil exits the exhaust ports of the solenoid valve

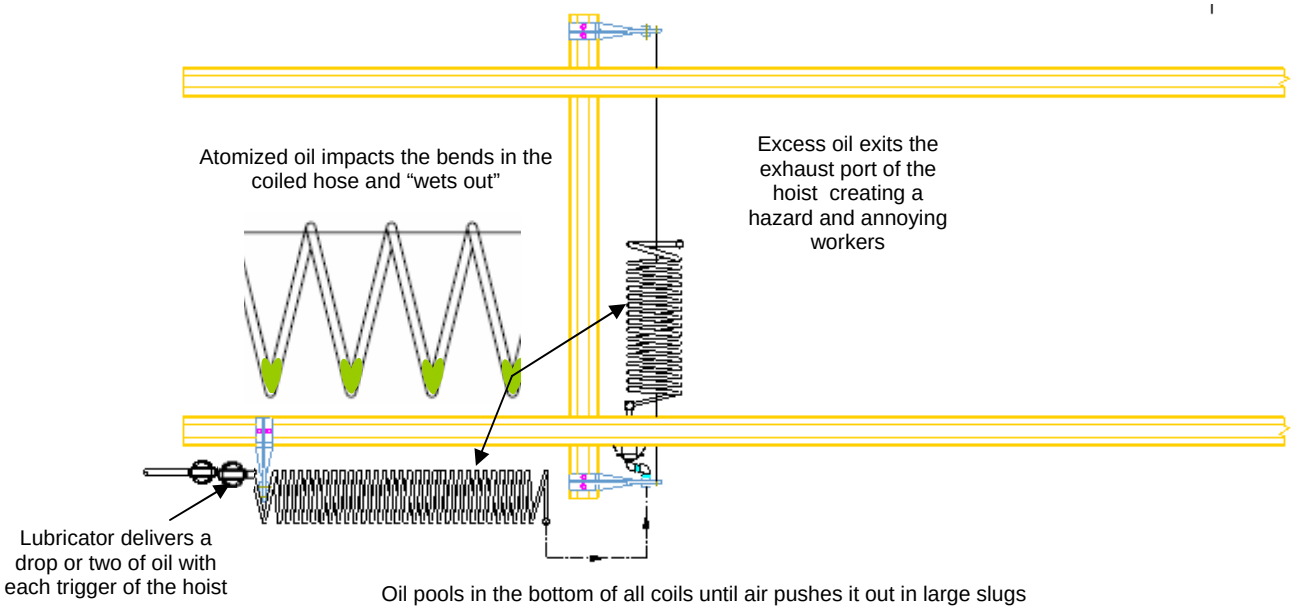
ACUMEN'S "DOWNSTREAM INJECTION" METHOD


1/8 OD Oil Filled Capillary Line
Compressed Air Inlet
Downstream Injection Lubricator
Silencer / Reclassifier
Oil is delivered at the point of use.
No pooling or wasted oil.

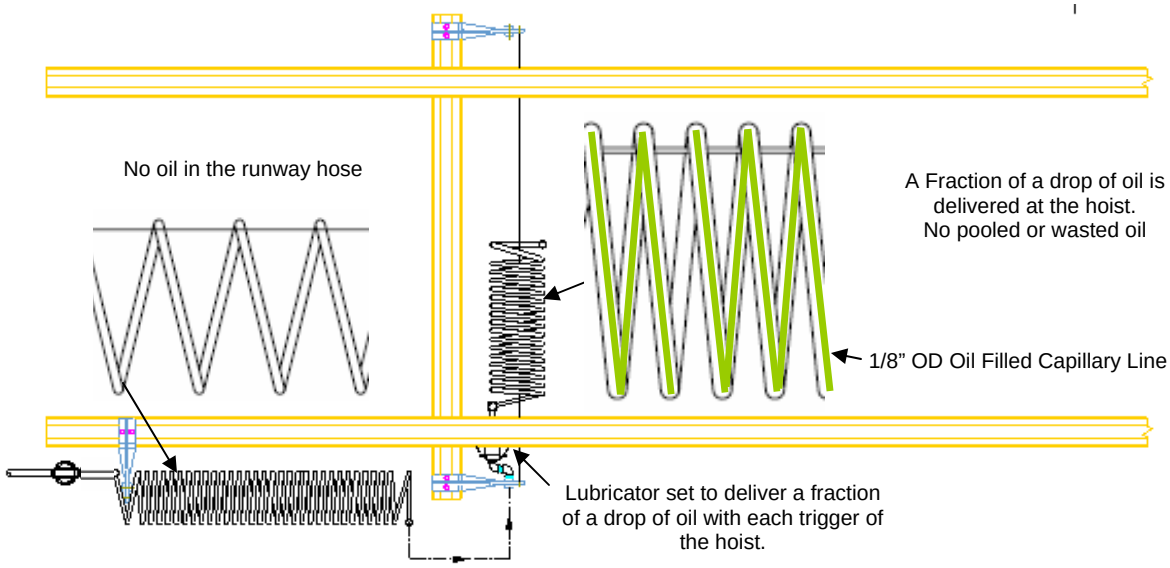
ACUMEN TECHNOLOGIES, INC.

HOIST LUBRICATION

CONVENTIONAL "MIST" METHOD

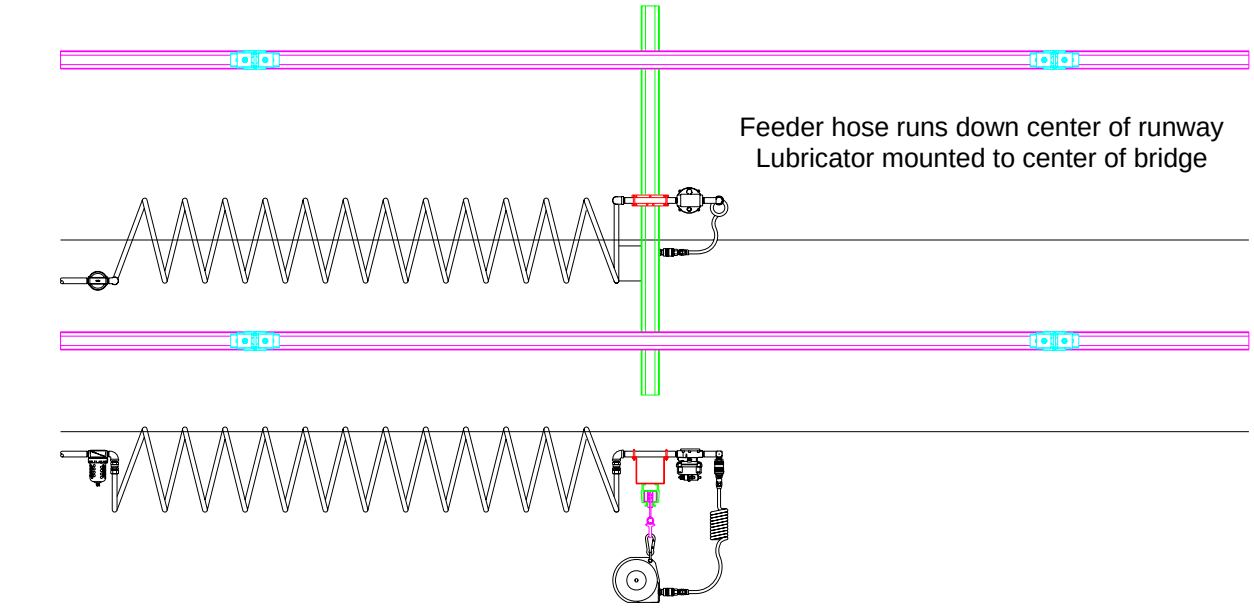

Atomized oil impacts the bends in the coiled hose and "wets out"
Excess oil exits the exhaust port of the hoist creating a hazard and annoying workers
Lubricator delivers a drop or two of oil with each trigger of the hoist
Oil pools in the bottom of all coils until air pushes it out in large slugs

ACUMEN'S "INJECTION" METHOD

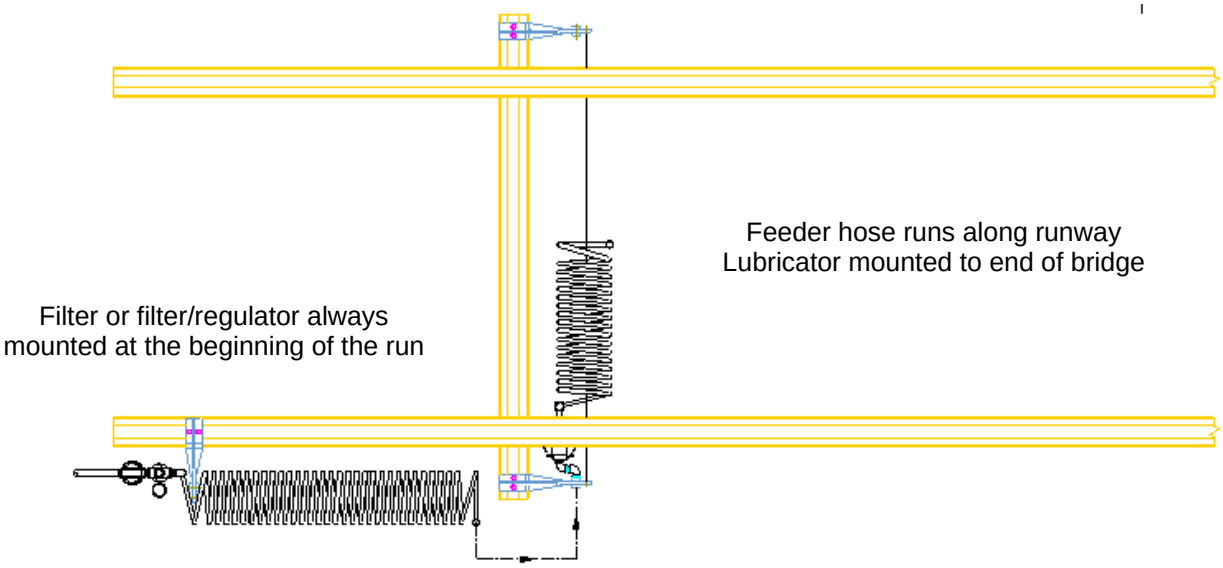

No oil in the runway hose
A Fraction of a drop of oil is delivered at the hoist. No pooled or wasted oil
1/8" OD Oil Filled Capillary Line
Lubricator set to deliver a fraction of a drop of oil with each trigger of the hoist.

ACUMEN TECHNOLOGIES, INC.

TYPICAL HOIST HOOK-UPS—SINGLE POINT LUBRICATION

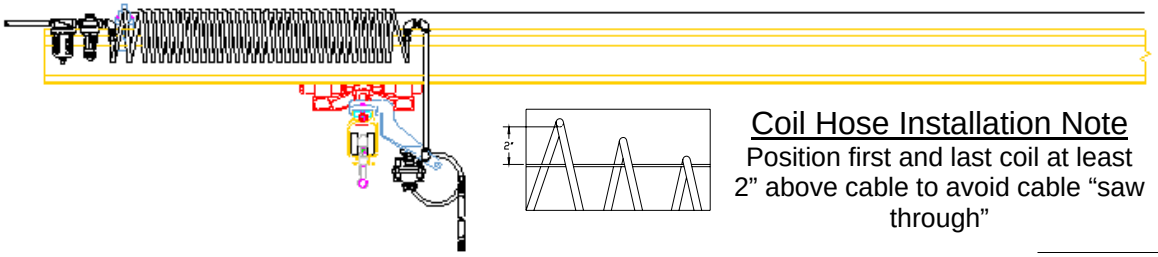


Feeder hose runs down center of runway
Lubricator mounted to center of bridge



Feeder hose runs along runway
Lubricator mounted to end of bridge

Filter or filter/regulator always mounted at the beginning of the run



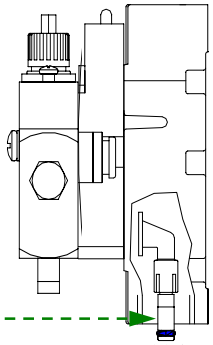
Coil Hose Installation Note

Position first and last coil at least 2” above cable to avoid cable “saw through”

ACUMEN TECHNOLOGIES, INC.

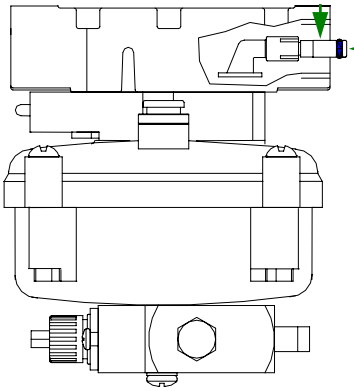
ACUMEN GOLD STANDARD COAXIAL CONNECTIONS

Positive O-ring seal of the internal oil line ..... EVERY TIME !

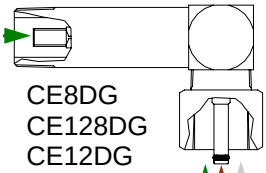


PGA60045 (1/2”)
PGA60065 (3/4”)

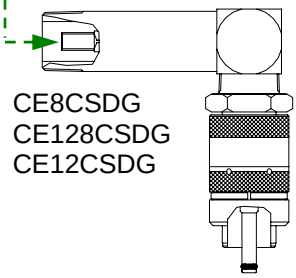
PA-1



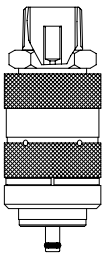
PGA64045 (1/2”)
PGA64065 (3/4”)



CE8DG
CE128DG
CE12DG

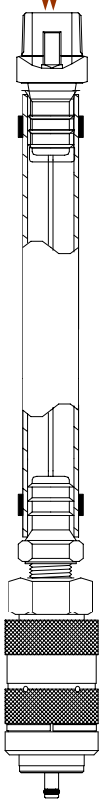


CE8CSDG
CE128CSDG
CE12CSDG

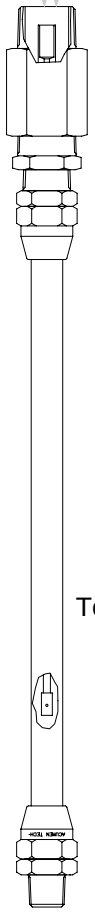


CS8DG
CS812DG
CS12DG

CN8DG
CN12DG

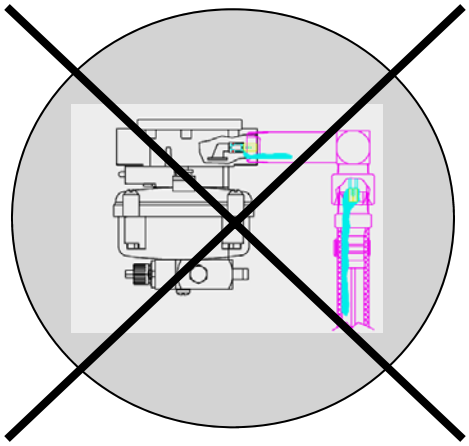


Whip Hose

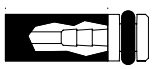


CA8DG
CA12DG

Tool Hose



Eliminates Leaking Internal Oil Connections Common with Old Style Coaxial Couplers



PA-2

Adapter Available to provide downward compatibility with Old Style Couplers in the Field

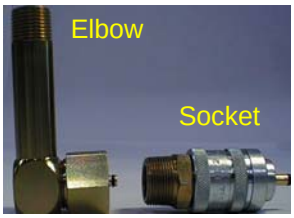
ACUMEN GOLD STANDARD COAXIAL CONNECTIONS

Positive O-ring seal of the internal oil line ..... every time !

Size	90º Elbow
1/2 - 1/2	CE8DG
3/4 - 1/2	CE128DG
3/4 - 3/4	CE12DG

Size	Combination Elbow / Socket
1/2 - 1/2	CE8CSDG
3/4 - 1/2	CE128CSDG
3/4 - 3/4	CE12CSDG

Acumen's 90º coaxial elbows are available in various sizes with and without integral quick connect

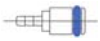


Above shows 90º Elbow and Direct Connect Socket separately. Above Right shows Combination Styles.

Gold Standard Adapters

PA-1

PA-2

PA-3 

Series Size	Thread Size	Plug	Socket Direct Connect	Socket Indirect Connect Male	Socket Indirect Connect Female
1/2	1/2	CP8G	CS8DG	CS8	CSF8
1/2	3/4		CS812DG	CS812	CSF812
3/4	1/2	CP128G			
3/4	3/4	CP12G	CS12DG	CS12	CSF12

Coaxial plugs and sockets allow you to simultaneously connect & disconnect the air / oil line under a zero pressure condition.
Coaxial sockets are available for direct connection (**D**) to either

Adapter	Size	Hose Nipple
CA8DG	1/2	CN8DG
CA12DG	3/4	CN12DG

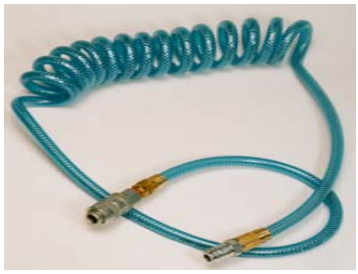
Our adapters are designed to couple coaxial hoses to either the SPL or our coaxial 90º elbow, directly..... without handling the internal capillary oil line.

Contact your authorized distributor for information on our probe adapters which allow you to use our ***state-of-the-art*** products with older technology in the field.

COAXIAL HOSE ASSEMBLIES

All hoses offered by Acumen Technologies, Inc are available as complete coaxial assemblies. These assemblies can be produced with your choice of hose style and fitting configurations and come complete with built-in prefilled oil line and check valve.

THC-12701-615-CP8G-DPA



THC-22701-615-CP8G-DCA

WHC-10707-1224-CN12DG-CS12

HOW TO ORDER

THC - 2 27 02 - 6 15 - CP8G - DPA

THC - Used for all Coaxial Tool Hose Assemblies

WHC - Used for all Coaxial Whip Hose Assemblies

Configuration

1 - STRAIGHT
2 - COILED

Color Code Key

27 - TRANSPARENT BLUE

CONSULT THE FACTORY FOR AVAILABLE CHOICES AND LEAD TIMES OF OTHER COLORS

Hose Type

01 - REINFORCED URETHANE	06 - PVC
02 - URETHANE	07 - NON-STRETCH
03 - NYLON	09 - PREMIUM AIR HOSE
05 - GENERAL PURPOSE AIR	10 - SOFT TAIL URETHANE

HOSE SIZE - In 16ths

HOSE LENGTH - THC: Feet WHC: Inches

Upstream Connection

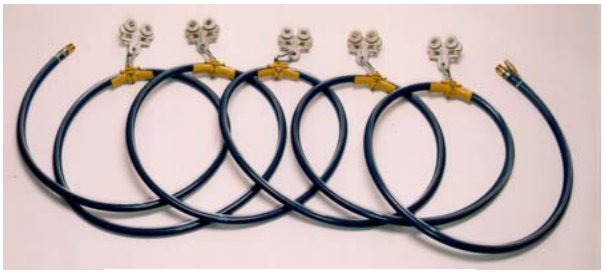
M08S - 1/2 MALE SWIVEL	CN8D - 1/2 COAX MALE DIRECT	CA8DG - 1/2 GOLD COAX ADAPTER
M08R - 1/2 MALE RIGID	CN12D - 3/4 COAX MALE DIRECT	CA12DG - 3/4 GOLD COAX ADAPTER
M12S - 3/4 MALE SWIVEL	CN8DG - 1/2 GOLD COAX MALE DIRECT	CP8G - 1/2 GOLD COAX PLUG
M12R - 3/4 MALE RIGID	CN12DG - 3/4 GOLD COAX MALE DIRECT	CP12G - 3/4 GOLD COAX PLUG

Downstream Connection

DC0 - DC SERIES 1/4	M04R - 1/4 MALE RIGID	CS8 - 1/2 COAX SOCKET
DCA - DC SERIES 3/8	M04S - 1/4 MALE SWIVEL	CS12 - 3/4 COAX SOCKET
DC2 - DC SERIES 1/2	M06R - 3/8 MALE RIGID	ISC06 - 1/4 PREVOST
DC3 - DC SERIES 3/4	M06S - 3/8 MALE SWIVEL	ISC08 - 3/8 PREVOST
DPA - DP SERIES 3/8	M08R - 1/2 MALE RIGID	
DP2 - DP SERIES 1/2	M08S - 1/2 MALE SWIVEL	
ST06 - STAUBLI 1/4	M12R - 3/4 MALE RIGID	
ST08 - STAUBLI 3/8	M12S - 3/4 MALE SWIVEL	

STANDARD HOSE ASSEMBLIES

Acumen Technologies, Inc offers both straight and coiled hose assemblies for a variety of applications including feeding air to traveling air stations with and without central fill oil systems, and pneumatic lines to hoists and balancers.



10708-830-M08S-M08S-S3

20703-625-M06S-M06S

HOW TO ORDER

2 07 04 - 8 25 - P5 - DC2 - S3

Configuration

1 - STRAIGHT
2 - COILED

Color Code Key

01 - BLACK	08 - YELLOW	25 - TRANS. RED	45 - NEON PINK
02 - BROWN	09 - ORANGE	26 - TRANS. GREEN	46 - NEON GREEN
04 - GRAY	10 - CLEAR	27 - TRANS. BLUE	48 - NEON YELLOW
05 - RED	11 - WHITE	28 - TRANS. YELLOW	49 - NEON ORANGE
06 - GREEN	12 - PURPLE	29 - TRANS. ORANGE	
07 - BLUE	14 - LT. GRAY	32 - TRANS. PURPLE	

Hose Type

01 - REINFORCED URETHANE	05 - GENERAL PURPOSE AIR
02 - URETHANE	06 - PVC
03 - NYLON	08 - TWIN LINE
04 - DUAL NYLON	09 - PREMIUM AIR HOSE

HOSE SIZE - In 16ths

HOSE LENGTH - In Feet

Upstream Connection

P3 - 1/4 SERIES PLUG	M06S - 3/8 MALE SWIVEL	F06R - 3/8 FEMALE RIGID
P4 - 3/8 SERIES PLUG	M08R - 1/2 MALE RIGID	F06S - 3/8 FEMALE SWIVEL
P5 - 1/2 SERIES PLUG	M08S - 1/2 MALE SWIVEL	F08R - 1/2 FEMALE RIGID
P6 - 3/4 SERIES PLUG	M12R - 3/4 MALE RIGID	F08S - 1/2 FEMALE SWIVEL
M04R - 1/4 MALE RIGID	M12S - 3/4 MALE SWIVEL	F12R - 3/4 FEMALE RIGID
M04S - 1/4 MALE SWIVEL	F04R - 1/4 FEMALE RIGID	F12S - 3/4 FEMALE SWIVEL
M06R - 3/8 MALE RIGID	F04S - 1/4 FEMALE SWIVEL	

Downstream Connection

DC0 - DC SERIES 1/4	M04R - 1/4 MALE RIGID	F04R - 1/4 FEMALE RIGID
DCA - DC SERIES 3/8	M04S - 1/4 MALE SWIVEL	F04S - 1/4 FEMALE SWIVEL
DC2 - DC SERIES 1/2	M06R - 3/8 MALE RIGID	F06R - 3/8 FEMALE RIGID
DC3 - DC SERIES 3/4	M06S - 3/8 MALE SWIVEL	F06S - 3/8 FEMALE SWIVEL
DPA - DP SERIES 3/8	M08R - 1/2 MALE RIGID	F08R - 1/2 FEMALE RIGID
DP2 - DP SERIES 1/2	M08S - 1/2 MALE SWIVEL	F08S - 1/2 FEMALE SWIVEL
ST06 - STAUBLI 1/4	M12R - 3/4 MALE RIGID	F12R - 3/4 FEMALE RIGID
ST08 - STAUBLI 3/8	M12S - 3/4 MALE SWIVEL	F12S - 3/4 FEMALE SWIVEL

SPECIAL FEATURES - S_,_,_

Consult the Factory For List

POLYBRAID AIR HOSE

ACUMEN TECHNOLOGIES' Polybraid innerbraided urethane hoses are the new advanced generation of ether based polyurethane. Working pressure capabilities are increased with the addition of a tough Dacron® Polyester® innerbraid reinforcement. The new compound formulation is our most flexible ever, allowing even smaller coil diameters than our standard unreinforced urethane

ADVANTAGES

- Very lightweight and easy to handle
- The most abrasion resistant hose available
- Very kink resistant
- Very flexible and user friendly, even in subzero temperatures
- Resistant to oils and greases
- Non-marring to auto finishes
- UV stablized for long service life.
- Tough and resistant to constant flexing
- Standard transparent blue allowing visual inspection of internal oil line.
- Coiled hose working length is 80% of the actual length.

22701-625-36/18

12701-6

TOUGH FROM THE INSIDE OUT

Polyurethane is one tough plastic, used in everything from skateboard wheels to auto bumpers. Our Polybraid retractable hose is the ideal choice for tough air tool requirements.

HOW TO ORDER

ID	LENGTH	PART NUMBER	WORKING PRESSURE @75 DEG F	WEIGHT
5/16	250 FOOT BULK	12701-5	200 PSI	3.9 lbs Per C FT
3/8	400 FOOT BULK	12701-6	200 PSI	7.5 lbs. Per C FT
1/2	300 FOOT BULK	12701-8	200 PSI	12 lbs. Per C FT
5/16	15 FOOT	22701-515-36/18	200 PSI	3.9 lbs Per C FT
5/16	20 FOOT	22701-520-36/18	200 PSI	3.9 lbs Per C FT
5/16	25 FOOT	22701-525-36/18	200 PSI	3.9 lbs Per C FT
3/8	15 FOOT	22701-615-36/18	200 PSI	7.5 lbs. Per C FT
3/8	20 FOOT	22701-620-36/18	200 PSI	7.5 lbs. Per C FT
3/8	25 FOOT	22701-625-36/18	200 PSI	7.5 lbs. Per C FT
1/2	15 FOOT	22701-815-36/18	200PSI	13 lbs. Per C FT
1/2	20 FOOT	22701-820-36/18	200 PSI	13 lbs. Per C FT
1/2	25 FOOT	22701-825-36/18	200 PSI	13 lbs. Per C FT

COILED HOSES STANDARD WITH 36" AND 18" STRAIGHT TAILS
SPECIAL TAILS AVAILABLE UPON REQUEST

POLYTHANE AIR HOSE

ACUMEN TECHNOLOGIES' Polythane unreinforced polyurethane hose is an increasingly popular choice for pneumatic applications. Also known as urethane (PUR), Polythane hose has over twice the tensile strength of vinyl and one-third the weight of rubber making it ideal for air tool applications up to 125 PSI. Polythane hose retains its lively rubberlike feel and excellent flexibility over long periods of time.

2270**2**-625-36/18

1270**2**-6

EXCEPTIONAL WEAR AND KINK RESISTANCE

You can cut an *ACUMEN TECHNOLOGIES'* Polythane hose with a sharp knife but it shrugs off normal wear up to 10 times better than other hose. Most oils and fuels will not affect it. And you can't permanently kink Polythane hose. The kind of abuse that destroys other recoil air hose doesn't even make a dent in ours. Spring guards are not required.

Color Code Key

27 - TRANSPARENT BLUE

CONSULT THE FACTORY FOR AVAILABLE CHOICES AND LEAD TIMES OF OTHER COLORS

HOW TO ORDER

ID	LENGTH	PART NUMBER	WORKING PRESSURE @75 DEG F	WEIGHT
1/4	500 FOOT BULK	1270**2**-4	147 PSI	3.4 lbs Per C FT
5/16	250 FOOT BULK	1270**2**-5	133 PSI	3.9 lbs Per C FT
3/8	200 FOOT BULK	1270**2**-6	133 PSI	7.5 lbs. Per C FT
1/2	150 FOOT BULK	1270**2**-8	133 PSI	12 lbs. Per C FT
5/16	15 FOOT	2270**2**-515-36/18	133 PSI	3.9 lbs Per C FT
5/16	20 FOOT	2270**2**-520-36/18	133 PSI	3.9 lbs Per C FT
5/16	25 FOOT	2270**2**-525-36/18	133 PSI	3.9 lbs Per C FT
3/8	15 FOOT	2270**2**-615-36/18	133 PSI	7.5 lbs. Per C FT
3/8	20 FOOT	2270**2**-620-36/18	133 PSI	7.5 lbs. Per C FT
3/8	25 FOOT	2270**2**-625-36/18	133 PSI	7.5 lbs. Per C FT
1/2	15 FOOT	2270**2**-815-36/18	133 PSI	13 lbs. Per C FT
1/2	20 FOOT	2270**2**-820-36/18	133 PSI	13 lbs. Per C FT
1/2	25 FOOT	2270**2**-825-36/18	133 PSI	13 lbs. Per C FT

ITEMS SHOWN ABOVE ARE IN STOCK
OTHER SIZES, LENGTHS, AND COLORS ARE AVAILABLE UPON REQUEST

POLYTHANE SOFT TAIL COILED AIR HOSE

ACUMEN TECHNOLOGIES' Polythane unreinforced polyurethane hose with a 70duro soft tail is an increasingly popular choice for pneumatic applications. This soft tail is extremely lightweight and flexible and will not mar painted finishes. Excellent ergonomic solution for automotive assembly line pneumatic tools. The mender joining the soft tail is full flow to provide maximum air flow with minimum pressure drop.

ADVANTAGES

- Very lightweight and easy to handle
- The most abrasion resistant hose available
- Very kink resistant
- Very flexible and user friendly, even in subzero temperatures
- Resistant to oils and greases
- Non-marring to auto finishes
- UV stablized for long service life.
- Tough and resistant to constant flexing
- Standard transparent blue allowing visual inspection of internal oil line.
- Coiled hose working length is 80% of the actual length.
- Full flow mender and hose ends

EXCEPTIONAL WEAR AND KINK RESISTANCE

You can cut an *ACUMEN TECHNOLOGIES'* Polythane hose with a sharp knife but it shrugs off normal wear up to 10 times better than other hose. Most oils and fuels will not affect it. And you can't permanently kink Polythane hose. The kind of abuse that destroys other recoil air hose doesn't even make a dent in ours. Spring guards are not required.

Color Code Key

27 - TRANSPARENT BLUE

CONSULT THE FACTORY FOR AVAILABLE CHOICES AND LEAD TIMES OF OTHER COLORS

HOW TO ORDER

ID	LENGTH	PART NUMBER	WORKING PRESSURE @75 DEG F	WEIGHT
3/8	15 FOOT	2702-615-36/18-S498	133 PSI	7.5 lbs. Per C FT
3/8	20 FOOT	2702-620-36/18-S498	133 PSI	7.5 lbs. Per C FT
3/8	25 FOOT	2702-625-36/18-S498	133 PSI	7.5 lbs. Per C FT
1/2	15 FOOT	2702-815-36/18-S498	133 PSI	13 lbs. Per C FT
1/2	20 FOOT	2702-820-36/18-S498	133 PSI	13 lbs. Per C FT
1/2	25 FOOT	2702-825-36/18-S498	133 PSI	13 lbs. Per C FT

ITEMS SHOWN ABOVE ARE IN STOCK
OTHER SIZES, LENGTHS, AND COLORS ARE AVAILABLE UPON REQUEST

PREMIUM AIR HOSE

Designed for use with push-on or standard fittings at working pressures of 300 PSI. Its lightweight feature makes it an ideal hose for air tool and festooning applications.

FEATURES

- Lightweight
- Silicone free core and cover
- Cold weather flexibility
- Complies with RMA's Class B designation for oil resistance
- Non-marring to auto finishes
- UV stablized for long service life.
- Chemical resistance of synthetic rubber
- Tough and resistant to constant flexing
- Available in blue, red, black, green, and gray

CONSTRUCTION

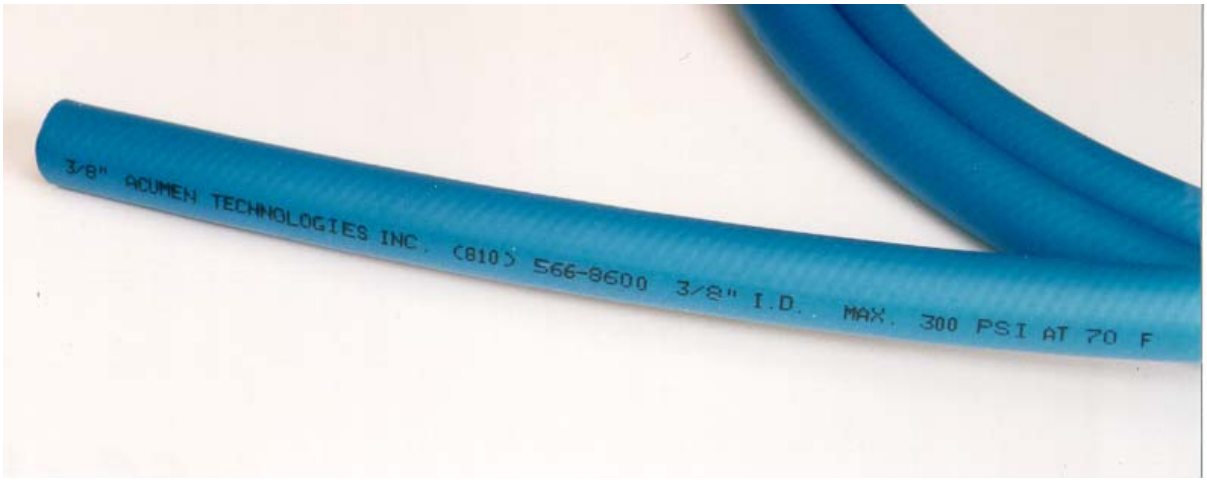
- Cover - Various colors, oil,weather and abrasion resistant synthetic rubber
- Reinforcement - One braid of high strength synthetic yarn laid at the most effective angle for maximum strength and coupling holding ability
- Tube - Seamless,oil and heat resistant

Color Code Key

01 - BLACK
04 - GRAY
05 - RED
07 - BLUE
06 - GREEN

SERVICE TEMPERATURE

- -40 deg F (-40 deg C) to +200 deg F (+93.3 deg C)



HOW TO ORDER

STOCK HOSES

ID	LENGTH	PART NUMBER	WORKING PRESSURE @75 DEG F	WEIGHT
3/8	500 FOOT BULK	10709-6	300 PSI	11 lbs. Per C FT
1/2	500 FOOT BULK	10709-8	300 PSI	15 lbs. Per C FT
3/4	500 FOOT BULK	10709-12	300 PSI	24 lbs Per C FT

NYLON AIR HOSE

The original nylon air hose produced for *Acumen Technologies, Inc.* by Nycoil. This hose sets the standard for the industry and is most commonly used for delivering air to moveable hoists, balancers, and air preparation units. Hose can be suspended directly from tool rail or strung along a nylon coated cable.

FEATURES

- Extremely Lightweight
- Resistant to most chemicals
- Highly flexible Nylon 12
- Less than 1% moisture absorption
- Excellent memory and coil retractability
- More abrasion resistant than rubber hose
- Brass swivel compression fittings on both ends prevents hose from twisting and tangling

SPECIFICATIONS

- **Recommended Maximum working length:** 50% of total linear length
- **Temp. range:** -20 deg F to +180 deg F
- **Working pressure:** 200 PSI
- **Range of coil sizes:** 1/8" to 1-1/4"

20503-8

20704-8

HOW TO ORDER

2 07 03 - 8

Configuration
1 - STRAIGHT
2 - COILED

Color Code Key
05 - RED
07 - BLUE
08 - YELLOW

Hose Type
03 - NYLON
04 - DUAL BOND

HOSE SIZE - In 16ths

NYLON CAPILLARY TUBING

11003-1-S1

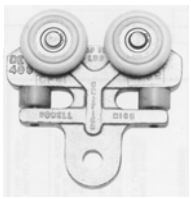
Acumen Technologies, Inc. provides NYCOIL'S 1/8" OD Nylon tubing in 1000 foot spools prefilled with oil for use in coaxial hose assemblies.

FEEDER HOSE ACCESSORIES

Festoon Hose Accessories

Part Number	Fig.	Description
FHP495A	A	Trolley for ETA-4
FHP477	B	Tag Line Slider for ETA-4
FHP325	C	Trolley for 3.25” Flange Flat Rail
FHP233	C	Trolley for 2.33” Flange 3” I-Beam
FHP266	C	Trolley for 2.66” Flange 4” I-Beam
FHP250-B	D	Trolley for 3” and 4” I-Beam
FHP9792	D	Webb Trolley
FHPA7A	E	Hollywood Rail Trolley
FHP321201	F	3” I-Beam Trolley
FHP421201	F	4” I-Beam Trolley
FHP102	G	Johnson / Unistrut Trolley
FHP2450		Snap Hook 3/8”
FHP98032544	B	KBK I Slider
FHP90232544	B	KBK II Slider
FHP20133-16	H	Saddle Clamp, Small 10mm -16mm
FHP20133-25	H	Saddle Clamp, Medium 17mm -25mm
FHP20133-36	H	Saddle Clamp, Large 26mm -36mm

A



B

C

D

E

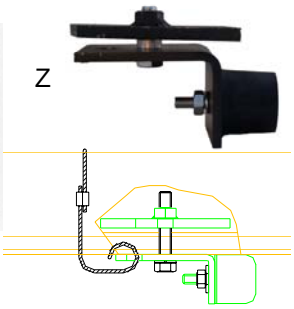
F

G

H

W

Z



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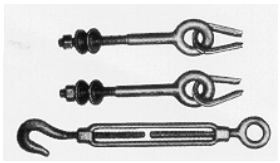
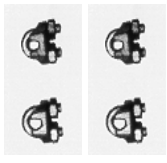
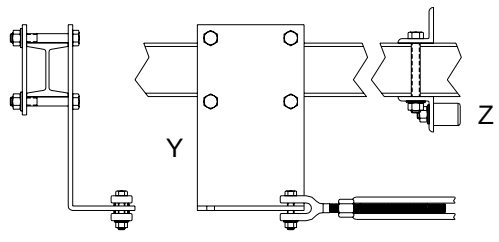




Y

Z



Side

Front

Coiled Hose Accessories

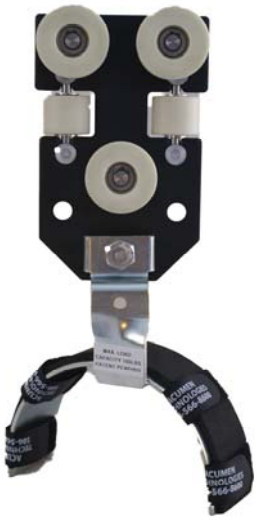
Description	Fig.	Part Number
Cable Trolley - Double Wheel		FHP21116
1/4” OD Clear Nylon Coated Cable	W	FHP98300
6” Hook & Eye Cable Kit	X	FHP98320
6” Jaw & Eye Cable Kit		FHP98322
12” Hook & Eye Cable Kit	X	FHP98321
12” Jaw & Eye Cable Kit		FHP98323
4” I-Beam Bracket	Y	FHPBRKT4
4” Mid-Rail Stop for ETA4	Z	MRSE

FESTOON CABLE TROLLEYS

ACUMEN TECHNOLOGIES' Manufactures an assortment of hose and cable saddles which are designed to fit every manufacturer's tool rail. Our unique design helps to provide an orderly festooning of your DC cable or air hose minimizing wear and tear. The saddles are positioned at a 30 degree angle to the tool rail which allows the hose or cable to store neatly in the home position and take up minimal space.

ADVANTAGES

- Velcro straps make for easy install and removal of the hose or cable
- 30 degree angle allows hose or cable loops to ride side by side reducing strain and increasing hose or cable life
- Universal saddle can be attached to most existing customer trolleys
- Foam rubber padding reduces wear on hose or cable
- Saddles available in 2", 6.25", and 12" radius to suit cable maximum bend radius requirements
- No nuts and bolts or other small parts to lose during cable or hose change out



HOW TO ORDER

FCT E V 6.25 B

FCT - Festoon Cable Trolley

Saddle/Trolley Type

A - Saddle with Nut, Bolt, & Washer
B - Saddle Only
E - Saddle & Trolley for Unified ETA4
F - Saddle & Trolley for Unified ETA8
G - Saddle & Trolley for Knight 4100
H - Saddle & Trolley for Knight 4500-7500
P - Saddle & Trolley for DeMag KBK 100
K - Saddle & Trolley for DeMag KBK I
L - Saddle & Trolley for DeMag KBK II & IIL
M - Saddle & Trolley for Zimmerman ZRA1
N - Saddle & Trolley for Zimmerman ZRA2
S - Saddle & Trolley for Zimmerman ZRAT
Y - Saddle & Trolley for Zimmerman ZRS2 & ZRS3

Hold Down

V - Velcro
B—Bolt Down

Saddle Diameter (Inches)

2"
6.25"
12"

Saddle Angle

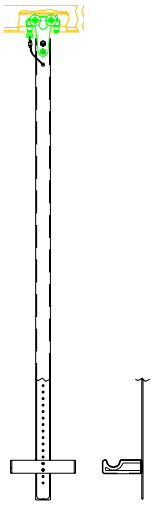
A– 0 Degrees
B– 30 Degrees

Options

No Options—Leave Blank
A– Dual Trolley

TOOL HOSE ACCESSORIES

Part Number	Description
TS-6C	Tool Support - 6” Cage
TS-6CW	Tool Support - 6” Cage w/ Clamps
TS-8C	Tool Support - 8” Cage
TS-8CW	Tool Support - 8” Cage w/ Clamps
TS-1J	Tool Support ‘J’ Type
TS-2J	Tool Support - Double ‘J’ Type
TS-10J	Tool Support - “Cradle” Type
TSBE72E1	Tool Support - “Cradle” Type With 72” bar and FTE trolley



Description	Part Number
Surface Finish Protector, Small (Fits DCO)	FP2
Surface Finish Protector, Large (Fits DCA & DC2)	FP3
Surface Finish Protector—ISC06 (Fits 5/16” & 3/8” Hose)	NSB06-38B
Surface Finish Protector—ISC08 (Fits 5/16” & 3/8” Hose)	NSB08-N
Surface Finish Protector—ISC08 (Fits 1/2” Hose)	295000481

Part Number	Description
94300	Composite Dyna Swivel 1/4
190026	Steel Dyna Swivel 1/4
190027	Steel Dyna Swivel 3/8
190028	Steel Dyna Swivel 1/2
190010	Plastic Coated Dyna Swivel 3/8 Female x 1/4 Male
190011	Plastic Coated Dyna Swivel 3/8 Female x 3/8 Male
190012	Plastic Coated Dyna Swivel 1/2 Female x 1/2 Male

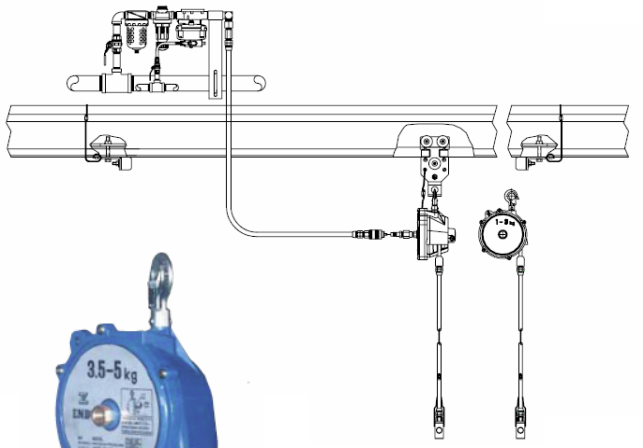
NFAN2F-N2M	Free Angle Swivel 1/4 Female x 1/4 Male
NFAN3F-N3M	Free Angle Swivel 3/8 Female x 3/8 Male
NFAP-N2M-UA	Free Angle Swivel 1/4 Industrial Interchange Plug x 1/4 Male
NFAP-N2M-UB	Free Angle Swivel 3/8 Industrial Interchange Plug x 1/4 Male
NFAP-N3M-UB	Free Angle Swivel 3/8 Industrial Interchange Plug x 3/8 Male

COAXIAL AIR TOOL BALANCERS

Acumen Technologies offers the only air tool balancer on the market capable of working with injection lubrication systems. Acumen's unique design allows the balancer to function without interfering with the internal oil line inside the balancer and hose.

ADVANTAGES

- Eliminates the need for an air supply hose and a separate balancer
- True Zero Gravity with no drifting or strain
- Tapered drum, quality springs and bearings provides smooth hose travel throughout the 51.2 inch stroke
- Tension adjustment is easy and precise
- High impact ABS case and a forged metal hook
- Hose is non-marring to product finishes
- UV stablized for long service life.
- Tough and resistant to constant flexing
- Standard transparent blue allowing visual inspection of internal oil line.



HOW TO ORDER

CHB - 12701 - 6 5 - CP8G - ISC08 - S532

CHB - Coaxial Air Tool Balancers

Configuration
1 - STRAIGHT

Color Code Key
27 - TRANSPARENT BLUE

Hose Type
01 - REINFORCED URETHANE

HOSE SIZE - 3/8" ID

HOSE EXTENSION LENGTH - Feet

Upstream Connection
CP8G - 1/2 GOLD COAX PLUG

Downstream Connection

DC0 - DC SERIES 1/4	M04R - 1/4 MALE RIGID	ISC06 - 1/4 PREVOST
DCA - DC SERIES 3/8	M04S - 1/4 MALE SWIVEL	ISC08 - 3/8 PREVOST
DPA - DP SERIES 3/8	M06R - 3/8 MALE RIGID	SCB1 - OETIKER 1/4
ST06 - STAUBLI 1/4	M06S - 3/8 MALE SWIVEL	SCE - OETIKER 3/8
ST08 - STAUBLI 3/8	ACE - JAPANESE PLASTIC	110SN - NITTO KOHKI

Capacity
S531 - 3.3-5.5lbs
S532 - 5.5-7.7lbs
S503 - 7.7-11.0lbs
S533 - 11.0-14.3lbs

COAXIAL HOSE REELS

Acumen Technologies, Inc. will manufacture coaxial hose reels for use with injection lubrication systems to your exact specifications. Our numerous hose styles and accessories are made to satisfy your plant requirements. Available with air preparation onboard or designed to accept your plant air from stationary FRL's off your header.

ACHR-THC-10709-840-CP12G-M08R-S320,467,468
Standard hose reel on pedestal with 40' of 1/2" general purpose coaxial air hose and air prep package.

We install oil lines in Hose Reels manufactured by Hannay or Reel Craft.
Specify Brand, Hose Size and Length, Fitting at the tool end, and CoAxial connection size at the inlet.

HOW TO ORDER ACHR - THC - 10709 - 820 - CP8G - M08R

ACHR - THC Coaxial Hose Reel

Configuration
1 - STRAIGHT

Color Code Key

01 - Black	07 - Blue
05 - Red	27 - Transparent Blue

Hose Type
01 - Reinforced Urethane
09 - Premium Rubber

HOSE SIZE - In 16ths

HOSE LENGTH - Feet

Upstream Connection
CP8G - 1/2 GOLD COAX PLUG
CP12G - 3/4 GOLD COAX PLUG

Downstream Connection

DC0 - DC SERIES 1/4	M04R - 1/4 MALE RIGID	ISC06 - 1/4 PREVOST
DCA - DC SERIES 3/8	M04S - 1/4 MALE SWIVEL	ISC08 - 3/8 PREVOST
DPA - DP SERIES 3/8	M06R - 3/8 MALE RIGID	SCB1 - OETIKER 1/4
ST06 - STAUBLI 1/4	M06S - 3/8 MALE SWIVEL	SCE - OETIKER 3/8
ST08 - STAUBLI 3/8	ACE - JAPANESE PLASTIC	110SN - NITTO KOHKI

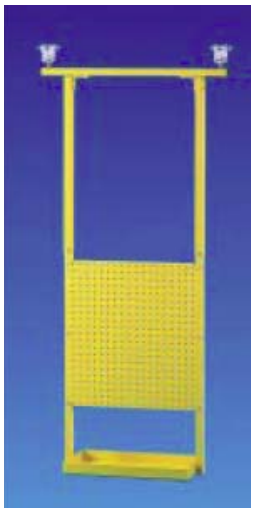
SPECIAL FEATURES - S_,_,_
Consult the Factory for List

LINE SIDE LIMOS

Acumen Technologies, Inc. manufactures traveling tool and parts carts to your exact specifications. Our numerous styles and accessories are made to satisfy your plant requirements. Available with air preparation onboard or stand alone without air.

The Limos above are manufactured from Creform tubing that can be fabricated to any height, width, and depth required and can include flat or tilted or adjustable shelves, tool holders, and pneumatic and/or electric power outlets. Limos can be designed to return to the home position manually or automatically.

Suitable for assembly environments with balancers, air hose reels,

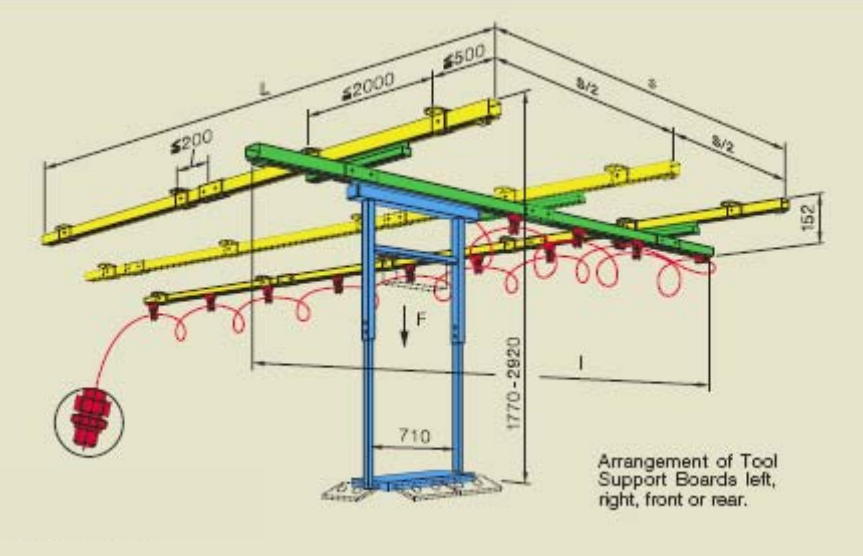


Suitable for tools and assembly materials

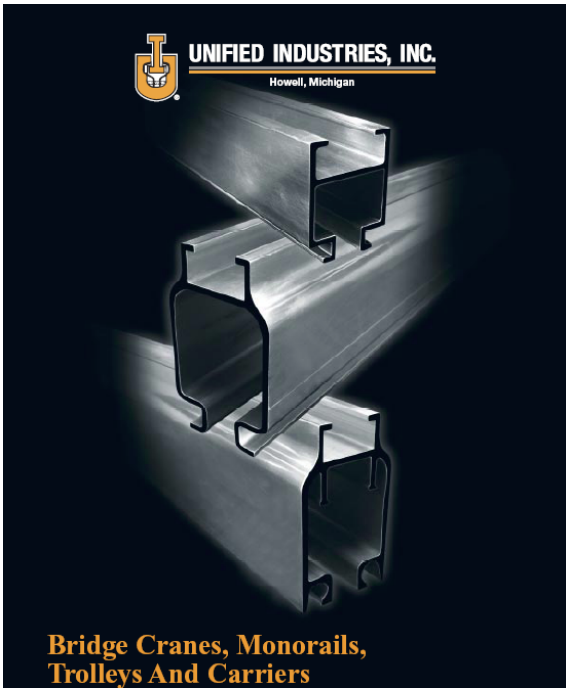
Designs limited only by the imagination. Tell us about your specific application.

Tool Rail

Single Track Underslung Crane with Tool Transporter



Unified Tool Rail



Aluminum Rail in 4” and 8” profiles with capacities up to 19,300lbs

AIR PREPARATION COMBO ORDERING CODE

Acumen Technologies, Inc specializes in the design and build of complete FRL assemblies for air preparation packages. Each part of the system is chosen to produce the best air preparation systems possible using the latest technology.

HOW TO ORDER

Model No. APCG6 - 2 1 2 - 2 G E - 24BFS2

APCG - Gold Standard Air Prep Combos

APC - Old Coax Air Preparation Combos

Size

2 - 1/4
3 - 3/8
4 - 1/2
6 - 3/4

Filter

1 - FD100
2 - FD100X
X - NO FILTER

Regulator

1 - R100
2 - R150
3 - IR100-M85
X - NO REGULATOR

Lubricator

1 - PA60045 OR PA60065
2 - PA64045 OR PA64065
3 - PA60041 OR PA60061
4 - PA64041 OR PA64061
5 - MIST LUBRICATOR
X - NO LUBRICATOR

Number of Outlets

Suspension Options

A - NO SUSPENSION
B - WELDING BRACKET
C - CLEVIS
D - HOLLYWOOD
E - WAMPFLER
F - 3" I-BEAM
G - UNIFIED ETA4
H- KBK I
J - JOHNSON / UNISTRUT
K - WEBB 9792
L - 4" I-BEAM
M - KNIGHT 4" STEEL
N - NO TROLLEYS
P - PATENTED RAIL
Q - KBK II
R - KNIGHT 4" ALUMINUM
S_ - SPECIAL: Consult the

Outlet Options

A - 1/2 COAXIAL SOCKET
B - 3/4 COAXIAL SOCKET
C (LL)** - 1/2 WHIP HOSE WITH 1/2 SOCKET
D (LL)** - 3/4 WHIP HOSE WITH 1/2 SOCKET
E (LL)** - 3/4 WHIP HOSE WITH 3/4 SOCKET
X - NO OUTLET HOSE OR SOCKET
** (LL) = LENGTH IN INCHES

Base Assembly Options

A - NO LOAD BAR
B - BALANCER BAR
C - DROP BARS
D - EXTERNAL RESERVOIR - 10oz
E - EXTERNAL RESERVOIR - 1 QUART
F - CENTRAL FILL ACCESSORIES
G - FOR CURVED RAIL
H- QUICK DISCONNECT PLUG AT INLET
S_,_,_ - SPECIAL: Consult the Factory for List

FRL Assembly with SPL and Hose

Specify Number of Outlets

Filter
3/8”
1/2”
3/4”

Regulator
3/8”
1/2”
3/4”

Piggyback
Filter / Regulator
3/8”
1/2”
3/4”

Injection Lubricator
with
Integral Reservoir

Injection Lubricator
with
Separate Reservoir

Injection Lubricator
without
Reservoir

Lubricator
1/2”
3/4”

90 Degree
CoAxial Elbow
1/2”
3/4”

CoAxial Socket
1/2”
3/4”

Whip Hose
1/2”
3/4”
Specify Length in Inches

Suspension Options

Tool Rail Carrier
Specify Rail Type

Support Brace

Straight Hose Assembly
5/16” ID
3/8” ID
1/2” ID
Specify Length

Coiled Hose Assembly
5/16” ID
3/8” ID
1/2” ID
Specify Length

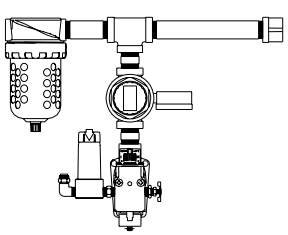
Specify Fitting for Tool End of Hose

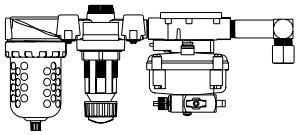
ACUMEN TECHNOLOGIES, INC.

51445 Celeste Drive • Shelby Township, MI 48315
(586) 566-8600 • Fax (586) 566-4062

APC BASE ASSEMBLIES

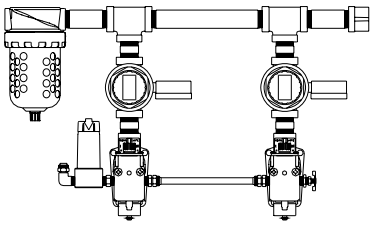
Single Air Preparation Combo

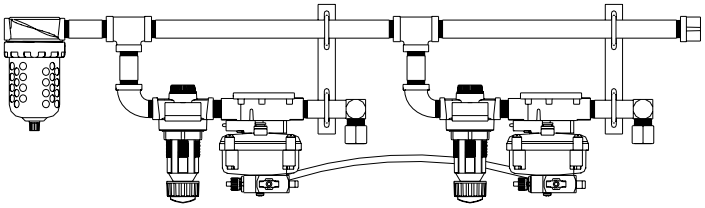




SIZE	ASSEMBLY PART NUMBER
1/2	APCG4-111-1WX-YYZ (Vertical Lubricator)
1/2	APCG4-112-1WX-YYZ (Horizontal Lubricator)
3/4	APCG6-211-1WX-YYZ (Vertical Lubricator)
3/4	APCG6-212-1WX-YYZ (Horizontal Lubricator)

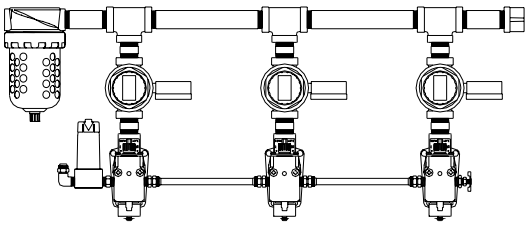
Double Air Preparation Combo

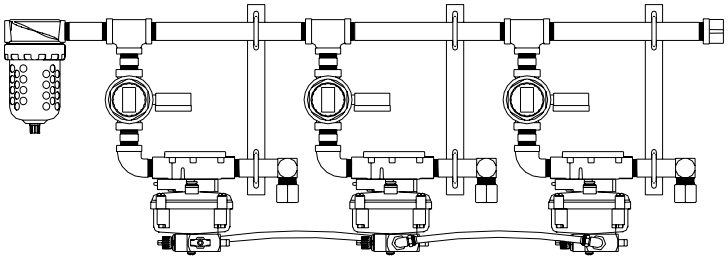




SIZE	ASSEMBLY PART NUMBER
1/2	APCG4-111-2WX-YYZ (Vertical Lubricator)
1/2	APCG4-112-2WX-YYZ (Horizontal Lubricator)
3/4	APCG6-211-2WX-YYZ (Vertical Lubricator)
3/4	APCG6-212-2WX-YYZ (Horizontal Lubricator)

Triple Air Preparation Combo





SIZE	ASSEMBLY PART NUMBER
1/2	APCG4-111-3WX-YYZ (Vertical Lubricator)
1/2	APCG4-112-3WX-YYZ (Horizontal Lubricator)
3/4	APCG6-211-3WX-YYZ (Vertical Lubricator)
3/4	APCG6-212-3WX-YYZ (Horizontal Lubricator)

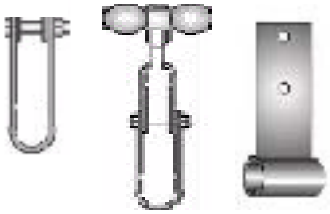
Assemblies shown above are typical, but not the only possibilities.
Please discuss your specifications with your Acumen distributor.

SUSPENSION, OUTLET & BASE ASSEMBLY OPTIONS

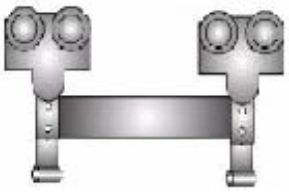
Acumen Technologies, Inc. will build your APC with the suspension that suits your plant requirements. Some of the more common styles are shown below. The options available on single point lubricators vary depending on tool rail height, location of work platforms and production employee's orientation to the assembly process. Our design assistance will help establish a total system that best suits your production, ergonomic, process and safety needs.

Code	Description
F	3" I-Beam Assembly
L	4" I-Beam Assembly

Combo Suspensions



Code	Description
C	Clevis Attachments
J	Johnson / Unistrut with Trolleys
B	Welding Bracket



Code	Description
G	Unified
H	KBK

Code	Description
D	Hollywood Assembly

For assembly less trolleys use Code N

Code	Description
K	Webb Trolley

Lubricator Outlet Options

Code	Description
A	Coaxial Socket 1/2 "
B	Coaxial Socket 3/4 "
C	1/2 " Whip Hose with 1/2 " Coaxial Socket
D	3/4 " Whip Hose with 1/2 " Coaxial Socket
E	3/4 " Whip Hose with 3/4 " Coaxial Socket
X	None

Base Assembly Options

Code	Description
B	Balancer Bar
C	Drop Bar
D	External Reservoir 10 oz
E	External Reservoir 1 Qt.
F	Central Fill Accessories
G	For Curved Rail
H	Q/D Plug at Inlet
S_,_,_	Special

SERV-OIL SINGLE POINT LUBRICATOR

Master Pneumatic's unique SERV-OIL Single Point Lubricator for precision lubrication of air tools is considered by many segments of industry as the most important single development in the field of air-tool lubrication. It is widely used in automotive assembly lines, and can improve air-tool performance in any industrial application.

REDUCES

- WEAR
- COST
- DOWNTIME

INCREASES

- CONTROL OF LUBRICATION
- LIFE OF EQUIPMENT
- PRODUCTION EFFICIENCY

ADVANTAGES

- **Precise Volume Control:** Metering pin injects precise amount of lubricant each time.
- **Wide Adjustment Range:** 1/2 drop to 1/200 drop with standard unit. Other adjustment ranges available.
- **Accurate Delivery:** Internal oil line directs oil to the tool inlet.
- **Consistent Delivery:** No puddling of oil in the air hose as with conventional "mist" or "fog" lubricators.
- **Consistent Torque Output:** No "feast or famine" oil delivery with the resultant speed-up or slow-down of tool output.

FEATURES

- **Removable Adjustment Key:** Discourages unauthorized adjustments
- **Sight Indicator:** Provides visual confirmation of oil flow
- **Built in Counter Standard:** Units can be field set to operate at 1,5 or 10 tool cycles for large or small tools
- **Gravity Oil Supply:** Since oil reservoir is not operating under line pressure lubricators can be filled automatically from a central gravity oil supply system
- **Warranty:** All SPL's are fully tested and ready to operate when shipped and carry a 7 year warranty direct from Master Pneumatic.

HOW TO ORDER

SIZE	MAXIMUM OUTPUT	PART NUMBER	GOLD STANDARD PART NUMBER	INTEGRAL RESERVOIR
1/2	.015 ml	PA64045	PGA64045	YES
1/2	.015 ml	PA60045	PGA60045	NO
3/4	.015 ml	PA64065	PGA64065	YES
3/4	.015 ml	PA60065	PGA60065	NO
1/2	.030 ml	PA64041	PGA64041	YES
1/2	.030 ml	PA60041	PGA60041	NO
3/4	.030 ml	PA64061	PGA64061	YES
3/4	.030 ml	PA60061	PGA60061	NO
1/2	.060 ml	PA64042	PGA64042	YES
1/2	.060 ml	PA60042	PGA60042	NO
3/4	.060 ml	PA64062	PGA64062	YES
3/4	.060 ml	PA60062	PGA60062	NO

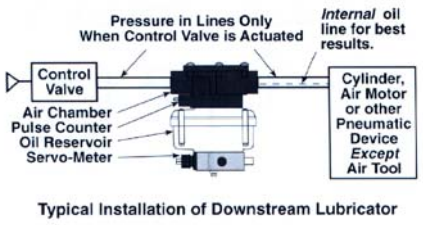
Add Suffix "BB" to part numbers for Double Counter Option

SEE PAGE 26 FOR COMPLETE SPL ASSEMBLY INFORMATION

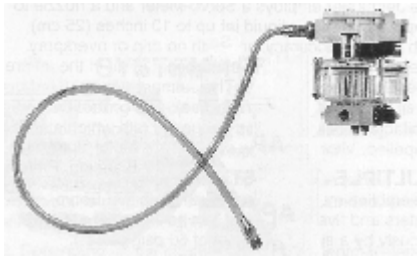
SERV-OIL DOWNSTREAM LUBRICATOR

For Cylinders,Air Motors, Valve-operated Drills, etc,

Master Pneumatic's downstream lubricator is designed to overcome the shortcomings of a conventional mist lubricator installed downstream of a control valve. Laboratory and field tests have shown that a lubricator installed in the conventional manner, results in most oil dispensed by the lubricator being exhausted to atmosphere through the exhaust port of the control valve.



Typical Installation of Downstream Lubricator



With conventional "mist" lubrication much of the oil passes through the control valve in a liquid state where it clings to the wall of the air line and moves back and forth with each valve cycle. The downstream lubricator eliminates this shortcoming by delivering the oil through an internal oil line directly to the lubrication point. The addition of a silencer / reclassifier to the exhaust port of the control valve eliminates the oil mess usually found at the control valve exhaust.

ADVANTAGES

- **Precise Volume Control:** Metering pin injects precise amount of lubricant each time.
- **Wide Adjustment Range:** 1/2 drop to 1/200 drop with standard unit. Other adjustment ranges available.
- **Accurate Delivery:** Internal oil line directs oil to the device inlet.
- **Extended Cylinder / Motor Life:** Proper lubrication results in longer wear and reduced downtime.
- **Clean Housekeeping:** No dumping of excess oil out the valve exhaust

FEATURES

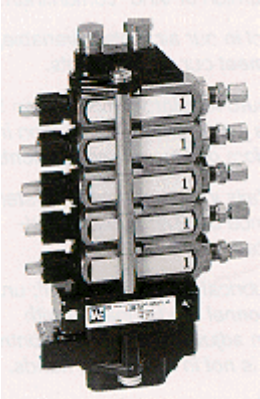
- **Removable Adjustment Key:** Discourages unauthorized adjustments
- **Sight Indicator:** Provides visual confirmation of oil flow
- **Built in Counter Standard:** Units can be field set to operate at 1,5 or 10 tool cycles for large or small tools
- **Gravity Oil Supply:** Since oil reservoir is not operating under line pressure lubricators can be filled automatically from a central gravity oil supply system

HOW TO ORDER

SIZE	MAXIMUM OUTPUT	HOSE LENGTH	PART NUMBER
1/2	.015 ml	15 FOOT	PD64045-THC-12701-515-M08R-M04S
1/2	.030 ml	15 FOOT	PD64041-THC-12701-515-M08R-M04S
1/2	.060 ml	15 FOOT	PD64042-THC-12701-515-M08R-M04S
3/4	.015 ml	15 FOOT	PD64065-THC-12701-515-M12R-M04S
3/4	.030 ml	15 FOOT	PD64061-THC-12701-515-M12R-M04S
3/4	.060 ml	15 FOOT	PD64062-THC-12701-515-M12R-M04S
1/2	SILENCER / RECLASSIFIER		MRS100-4
3/4	SILENCER / RECLASSIFIER		MRS100-6

SERV-OIL MULTIPLE POINT LUBRICATOR

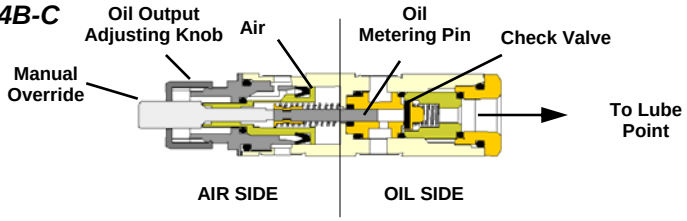
Up to 10 Servo-Meters can be assembled to make up a Multiple Point Lubricator (MPL). The modular assembly allows Servo-Meters to be added or subtracted at any time to serve changing requirements.



OPTIONS

Series 710: One mounting plate with 2 mounting holes.
Series 720: Top and bottom mounting plates with two holes each.
Number of Servo Meters: Up to 10 as required.
Choice of 3 Output Ratings: 1/2 drop, 1 drop (Standard), or 2 drops.
Frequency Control: Single Counter (Standard)
Double counter
Frequency controller
Seal Options: Buna (Standard), EPR, Neoprene, Viton

Model 71004104B-C



The Servo-Meter is the key module in the SERV-OIL line. It is a precision, positive-displacement oil injector which is actuated by an air pressure signal. 1/8" Oil-filled nylon line carries the injected oil from the Servo-Meter to the point of lubrication. A ball check valve at the end of the line ensures that the line remains full of oil and free of air.

HOW TO ORDER

MPL Model No. **710 ## ** 4B-@**

710 - Multiple point lubricator assembly

720 - Multiple point lubricator assembly with heavy duty mount

Number of Servo Meters

Specify the quantity with numerals from 01 to 10

05 - 1/2 Drop Servo Meters

10 - 1 Drop Servo Meters

20 - 2 Drop Servo Meters

4B - Used with all MPL orders

A - Servo-Meter shutoff (Non-shutoff standard)

B* - Block Plate (*) Location from top

C - Pulse Counter

CC - Two Pulse Counters

E - EPR seals

F - Frequency Controller

N - Neoprene seals

V - Viton seals

SEE PAGE 33 FOR OIL RESERVOIR OPTIONS

OIL RESERVOIRS

Servo-Meters can be supplied with attached or remote gravity oil reservoir systems. Remote reservoirs should be connected to the bottom port of the SERV-OIL equipment with a minimum 5/16 ID line. Pressure-fill systems should be avoided due to the high potential for nuisance leaks.

Transparent Reservoir

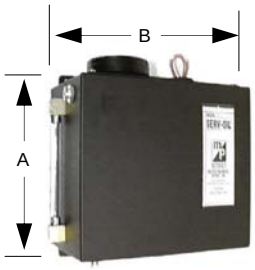
Part No. Capacity*

M476R 10 ounces (7970 drops)
M476RN 10 ounces (nylon bowl)
M476RP 10 ounces (polypropylene bowl)

Transparent Reservoir

Part No. Capacity*

M570-6R 1 quart (25,400 drops)
M570-12R 2 quart (50,000 drops)



Metal Reservoir
Includes internal oil filter, sight tube,quick-fill fitting, and filter breather fill cap.

Part No. Capacity*

473R 1 gallon (102,000 drops)
477R 5 gallons (508,000 drops)
479R 10 gallons (1,020,000 drops)

Accessories

Low Level Switch (not for 10-oz models):

Add suffix **G** to reservoir part number

High and Low Level Switchs (not for 10-oz models):

Add suffix **GG** to reservoir part number

Sight Dome & Remote Indicator:

Side Mounting: Part M481R

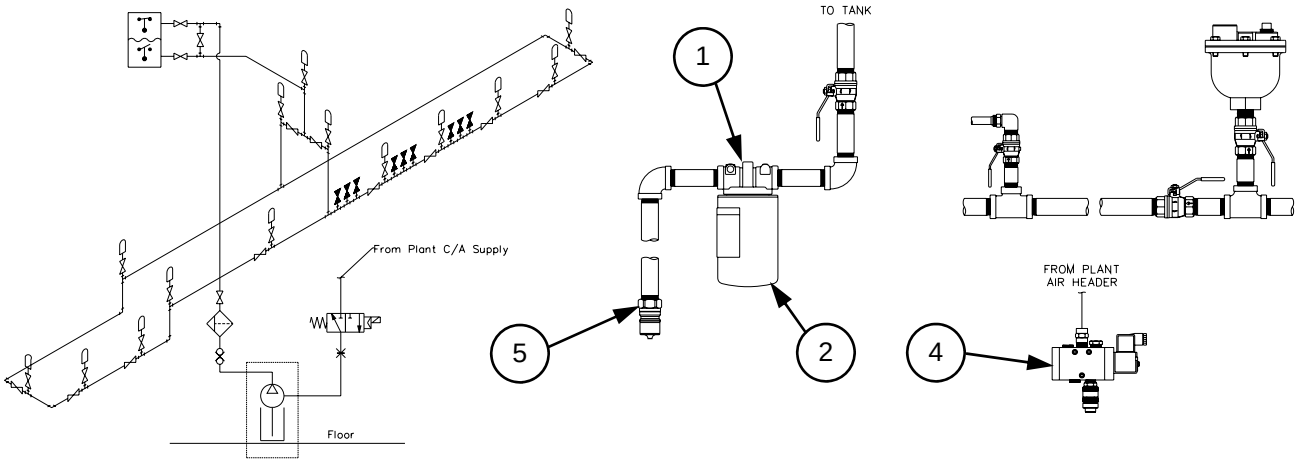
Top Mounting: Part 482R

RESERVOIR DIMENSIONS inches (cm)

		Demensions		
Part No.	**Capacity**	**A**	**B**	**Depth**
M476R	10 OUNCES	5.31 (13.5)	3.19 (8.10)	3.19 (8.10)
M476RN	10 OUNCES	5.31 (13.5)	3.19 (8.10)	3.19 (8.10)
M476RP	10 OUNCES	5.00 (12.7)	3.19 (8.10)	3.19 (8.10)
M570-6R	1 QUART	7.39 (18.8)	5.38 (13.7)	4.81 (12.2)
M570-12R	2 QUARTS	13.4 (34.0)	5.38 (13.7)	4.81 (12.2)
473R	1 GALLON	9.73 (24.7)	10.9 (27.6)	6.06 (15.4)
477R	5 GALLONS	17.7 (45.0)	14.9 (37.8)	6.06 (15.4)
479R	10 GALLONS	25.0 (63.5)	16.9 (42.9)	7.09 (18.0)

SEE PAGE 17 FOR 30 GALLON RESERVOIR AND COMPLETE SYSTEMS

OIL DELIVERY SYSTEMS



Det.	DESCRIPTION	PART No.
	30 Gallon Reservoir with Standard Controls	ODS-C-S
	30 Gallon Reservoir with Auto Pump-Up Controls	ODS-C-P
	30 Gallon Polyethylene Reservoir Only	ODS-T-X
	Electronic Control Package Only	ODS-E-S
	Electronic Control Package with Pump Up Controls	ODS-E-P
	Drum Pump Only	ODS-PUMP
	Air Hose to Pump	10705-68-P5-MO4R
	Oil Hose from Pump	10707-128-M12R-DHS12
	16 Gal Portable Oil Fill Cart with Hand Pump	FT8-16M
	55 Gal Portable Oil Fill Cart with Bung Pump	FT8-55M
	Oil Header Vent	ODS-VENT
	Poly Tubing, 3/8 OD Tube	ODS-222-6
	Porous Bronze Filter Assembly - 3/8 Tube	AC-584-18
	Central Fill Line Quick Disconnect Plug	AC-HN2
	Central Fill Line Quick Disconnect Socket	AC-HK2
	Capillary Tube Pliers	CTP97
1	Complete Oil Filter Assembly	ODS-1-X
2	Replacement Filter Element	ODS-2-X
3	Replacement Breather For Reservoir	ODS-3-X
4	Replacement Air Solenoid Valve	ODS-4-X
5	Replacement Disconnect For Oil Fill	ODS-5-X
6	Replacement HI-LO Switch Assembly	ODS-6-X

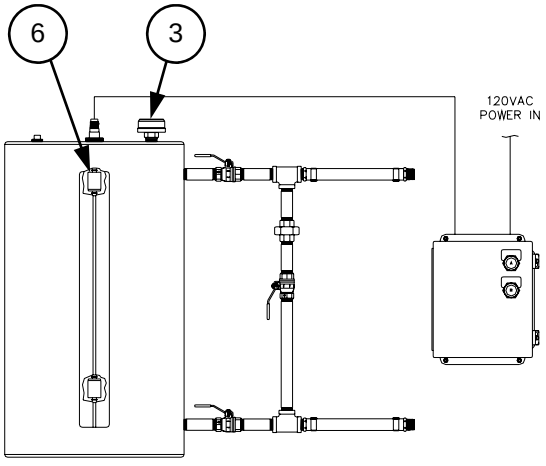
SYSTEM FEATURES

Higher Volume Polyethylene Reservoir
- Reduction in Cost of Fill
- Holds a Full 25 Gallon Drum of Oil

Electronic Controls
- Visual and / or Electronic Indication
- Available w/ Automatic Fill Controls

Gravity System
- Simplicity by Design
- Maintenance Free

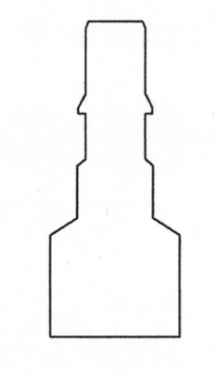
System Capability - 1000 Lineal Feet Pipe
- Design by ACUMEN

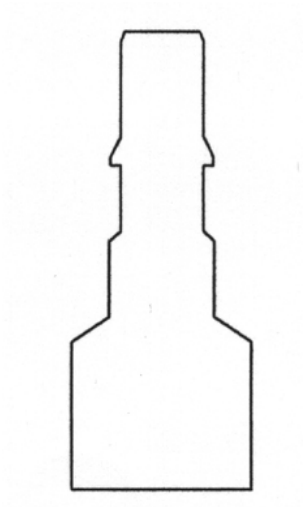


Your total system can be designed by Acumen Technologies, Inc. at no charge. Contact your technically trained, local Authorized Distributor for details.

STAUBLI COUPLINGS

- **Plugs conform to ISO 6150 series C profile**
- **Automatic safety conforms to anti hose-whip stipulations of ISO 4414**

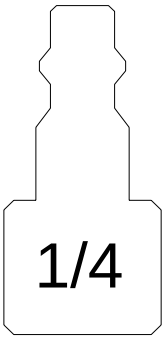
BODY SIZE	END CONNECTION SIZE	PLUG	SOCKET
This section contains 1/4" Body Size plugs and sockets Any plug will fit any socket listed 	**FEMALE PIPE THREAD**		
	1/8"	RBE06.6200	——
	1/4"	RBE06.6201	ERS06.1201
	3/8"	RBE06.6202	ERS06.1202
	MALE PIPE THREAD		
	1/8"	RBE06.6250	——
	1/4"	RBE06.6251	ERS06.1251
	3/8"	RBE06.6252	ERS06.1252
	1/2"	——	ERS06.1253
	HOSE BARB		
	1/4"	RBE06.6806	ERS06.1806
	5/16"	RBE06.6808	ERS06.1808
	3/8"	RBE06.6810	ERS06.1810
	1/2"	RBE06.6813	ERS06.1813
	SPRING GUARD		
	5/16"	——	ERS06.1808/PT16
	3/8"	——	ERS06.1810/PT16
	3/8"	——	ERS06.1810/PT21

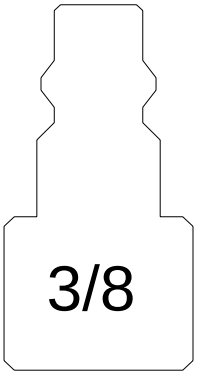
This section contains 3/8" Body Size plugs and sockets Any plug will fit any socket listed 	**FEMALE PIPE THREAD**		
	1/4"	RBE08.6201	ERS08.1201
	3/8"	RBE08.6202	ERS08.1202
	1/2"	RBE08.6203	ERS08.1203
	MALE PIPE THREAD		
	1/4"	RBE08.6251	ERS08.1251
	3/8"	RBE08.6252	ERS08.1252
	1/2"	RBE08.6253	ERS08.1253
	HOSE BARB		
	1/4"	RBE08.6806	——
	5/16"	RBE08.6808	ERS08.1808
	3/8"	RBE08.6810	ERS08.1810
	1/2"	RBE08.6813	ERS08.1813
	5/8"	RBE08.6816	——
	SPRING GUARD		
	3/8"	——	ERS08.1810/PT16
	3/8"	——	ERS08.1810/PT21
	1/2"	——	ERS08.1813/PT21

1/4 & 3/8 BODY SIZE COUPLINGS

Industrial Interchange

Mil spec 4109C

BODY SIZE	END CONNECTION SIZE	PLUG	DC SERIES SAFETY VENT	NON-MAR SAFETY VENT	PREVOST SAFETY VENT
This section contains 1/4" Body Size plugs and sockets Any plug will fit any socket listed 	**FEMALE PIPE THREAD**				
	1/8"	P320	——	——	——
	1/4"	P340	DC040SF	——	ISC 061 201
	3/8"	P360	DC060SF	——	ISC 061 202
	MALE PIPE THREAD				
	1/8"	P321	——	——	——
	1/4"	P341	DC041SF	——	ISC 061 251
	3/8"	P361	DC061SF	——	ISC 061 252
	HOSE BARB				
	1/4"	P342	DC042SF	——	ISC 061 806
	5/16"	P352	——	——	——
	3/8"	P362	DC062SF	——	ISC 061 810

This section contains 3/8" Body Size plugs and sockets Any plug will fit any socket listed 	**FEMALE PIPE THREAD**				
	1/4"	P440	DCA40SF	——	ISC 081 201
	3/8"	P460	DCA60SF	DPA60	ISC 081 202
	1/2"	P480	DCA80SF	——	ISC 081 203
	MALE PIPE THREAD				
	1/8"	P421	——	——	——
	1/4"	P441	DCA41SF	——	ISC 081 251
	3/8"	P461	DCA61SF	——	ISC 081 252
	1/2"	P481	DCA81SF	——	ISC 081 253
	HOSE BARB				
	1/4"	P442	——	——	——
	3/8"	P462	DCA62SF	DPA62	ISC 081 810
	1/2"	P482	DCA82SF	DPA82	ISC 081 813

1/2 & 3/4 BODY SIZE COUPLINGS

Industrial Interchange

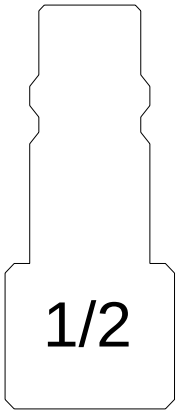
Mil spec 4109C

END CONNECTION SIZE	PLUG	DC SERIES SAFETY VENT	NON-MAR SAFETY VENT	PREVOST SAFETY VENT
FEMALE PIPE THREAD				
3/8”	P560	DC260SF	——	ISG 111 202
1/2”	P580	DC280SF	DP280	ISG 111 203
3/4”	P5120	DC2120SF	——	ISG 111 204
MALE PIPE THREAD				
1/4”	P541	——	——	——
3/8”	P561	DC261SF	——	ISG 111 252
1/2”	P581	DC281SF	——	ISG 111 253
3/4”	P5121	DC2121SF	——	ISG 111 254
HOSE BARB				
3/8”	P562	DC262SF	DP262	ISG 111 810
1/2”	P582	DC282SF	DP282	ISG 111 813
3/4”	P5122	DC2122SF	——	ISG 111 819

BODY SIZE

This section contains 1/2” Body Size plugs and sockets

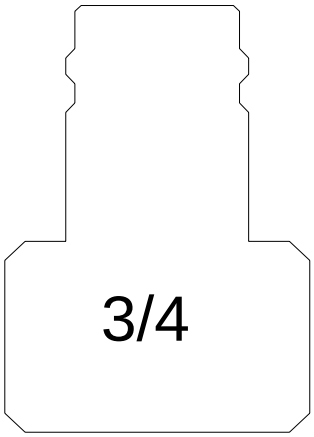
Any plug will fit any socket listed



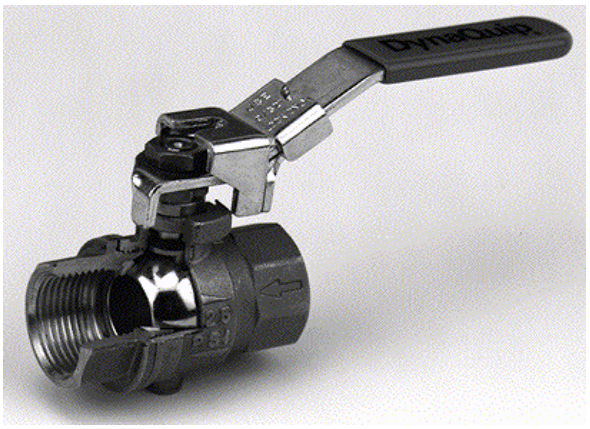
FEMALE PIPE THREAD				
3/4”	P5120	DC3120SF	——	——
1”	——	DC3160SF	——	——
MALE PIPE THREAD				
1/2”	P681	——	——	——
3/4”	P6121	DC3121SF	——	——
1”	P6161	DC3161SF	——	——
HOSE BARB				
1/2”	P682	——	——	——
3/4”	P6122	DC3122SF	——	——

This section contains 3/4” Body Size plugs and sockets

Any plug will fit any socket listed



DYNAQUIP SAFETY EXHAUST VALVE
BRASS



VMH2-A9JP

MATERIALS

Body: Brass, Forged

Stem: Brass, Nickle Plated

Thrust Washer: 25% Carbon Reinforced PTFE

Stem Seal: 15% Glass Reinforced PTFE

Packing Nut: Brass, Nickle Plated

Handle: Steel, Dacromet Finish, Vinyl Grip

Handle Nut: Steel, Dacromet Finish

Packing Nut: Brass, Nickle Plated

Ball Seats: 15% Glass Reinforced PTFE

Ball: Brass, Chrome Plated

End Cap: Brass, Forged

DE-ENERGIZE & LOCK OUT

DynaQuip safety exhaust ball valves automatically and continuously vent residual air on the down-stream side when the valve is turned off. Lockout handle can be padlocked only in this position. With this type of venting action and lockout design, the ball valve ensures air-powered equipment is safe to service.

SPECIFICATIONS

Pressure Rating: 200 PSI Air

Temperature Range: 40 deg to 140 deg F

End Type: Threaded

Handle: Lever with tamper proof lockout feature

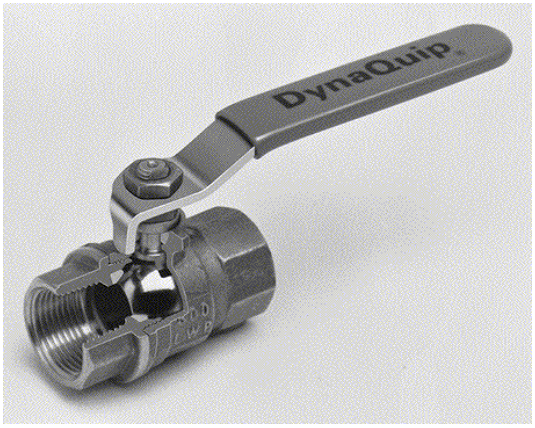
Exhaust Rate: 14.5 SCFM @ 100 PSI

HOW TO ORDER

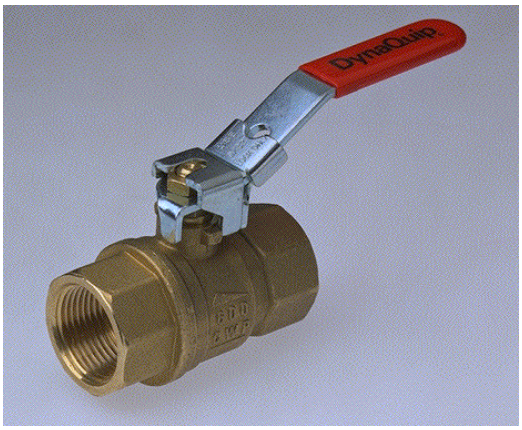
SIZE	PART NUMBER
1/4	VMH2-A9JP-1/4
3/8	VMH2-A9JP-3/8
1/2	VMH2-A9JP-1/2
3/4	VMH2-A9JP-3/4
1	VMH2-A9JP-1
1 1/4	VMH2-A9JP-1 1/4
1 1/2	VMH2-A9JP-1 1/2
2	VMH2-A9JP-2

Meets requirements of Par. 1910.147 of the O.S.H.A. rules and regulations for energy isolating and lockout devices

DYNAQUIP TWO-PIECE SCREWED BODY VALVE BRASS



VMH2-A9



VMH2-A9OP

SPECIFICATIONS

Pressure Rating: 600 PSI CWP (non-shock)

Steam Rating: 150 WSP

Temperature Range: -20 deg to 370 deg F

End Type: Threaded

Handle: Lever with vinyl grip standard

Options: Lockout Handle

MATERIALS

Body: Brass, Forged

Stem: Brass, Nickle Plated

Thrust Washer: 25% Carbon Reinforced PTFE

Stem Seal: 15% Glass Reinforced PTFE

Packing Nut: Brass, Nickle Plated

Handle: Steel, Dacromet Finish, Vinyl Grip

Handle Nut: Steel, Dacromet Finish

Ball Seats: 15% Glass Reinforced PTFE

Ball: Brass, Chrome Plated

End Cap: Brass, Forged

HOW TO ORDER

SIZE	PART NUMBER W/O LOCKOUT	PART NUMBER WITH LOCKOUT HANDLE
1/4	VMH2-A9-1/4	VMH2-A9OP-1/4
3/8	VMH2-A9-3/8	VMH2-A9OP-3/8
1/2	VMH2-A9-1/2	VMH2-A9OP-1/2
3/4	VMH2-A9-3/4	VMH2-A9OP-3/4
1	VMH2-A9-1	VMH2-A9OP-1
1 1/4	VMH2-A9-1 1/4	VMH2-A9OP-1 1/4
1 1/2	VMH2-A9-1 1/2	VMH2-A9OP-1 1/2
2	VMH2-A9-2	VMH2-A9OP-2

APPROVALS

UL for LP gas

AGA and CGA for natural gas

Factory Mutual for fire protection systems

HOSE FITTINGS

Urethane Hose Fitting

Part No.	Description
PSM44	1/4 Insert x 1/4 MPT
PSM54	5/16 Insert x 1/4 MPT
PSM56	5/16 Insert x 3/8 MPT
PSM64	3/8 Insert x 1/4 MPT
PSM66	3/8 Insert x 3/8 MPT
PRM66	**3/8 Insert x 3/8 MPT NON-SWIVEL**
PSM88	1/2 Insert x 1/2 MPT
PRF68	**3/8 Insert x 1/2 FPT**
PRF88	**1/2 Insert x 1/2 FPT**

The urethane fittings listed above are reusable fittings. All males except the **PRM66** are swivels. **All female fittings are non swivel.**

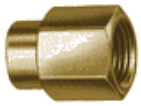
Description	Part Number - **SWIVEL**	Part Number - **RIGID**
1/4 Insert x 1/4 MPT		AC102-0404
3/8 Insert x 3/8 MPT		AC102-0606
1/2 Insert x 3/8 MPT		AC102-0806
1/2 Insert x 1/2 MPT	SM1568-8	AC102-0808
1/2 Insert x 3/4 MPT		AC102-0812
3/4 Insert x 1/2 MPT		AC102-1208
3/4 Insert x 3/4 MPT	SM1568-12	AC102-1212
1 Insert x 1 MPT	SM1568-16	
3/8 Insert x 1/2 FPT		AC104-0608
1/2 Insert x 1/2 FPT		AC104-0808
3/4 Insert x 3/4 FPT		AC104-1212

Swivel Fittings for Self Storing Nylon Hose

Part Number	Description
AC1400	1/4 Hose x 1/4 MPT
AC4500	5/16 Hose x 1/4 MPT
AC1600	3/8 Hose x 3/8 MPT
AC1700	1/2 Hose x 1/2 MPT
AC1802	3/4 Hose x 3/4 MPT

BRASS ADAPTERS & TUBE FITTINGS - HOSE CLAMPS

BRASS ADAPTER	SIZE	PART
Male x Male NPTF	1/4 x 1/8	AC379-0402
	1/4 x 1/4	AC370-0404
	3/8 x 1/4	AC379-0604
	3/8 x3/8	AC370-0606
	1/2 x 3/8	AC379-0806
	1/2 x 1/2	AC370-0808
	3/4 x 1/2	AC379-1208
	3/4 x 3/4	AC370-1212
Male x Female NPTF	1/4 x 1/4	AC375-0404
	1/4 x 3/8	AC375-0604
	3/8 x 3/8	AC375-0606
	3/8 x 1/2	AC375-0806
	1/2 x 1/2	AC375-0808
	1/2 x 3/4	AC375-1208
Female x Female NPTF	1/4 x 1/4	AC371-0404
	3/8 x 1/4	AC371-0604
	3/8 x3/8	AC371-0606
	1/2 x 3/8	AC371-0806
	1/2 x 1/2	AC371-0808



BRASS FITTING	SIZE	PART NUMBER
Tube x Pipe	3/8 X 1/4 MPT	AC68P-64
	3/8 X 3/8 MPT	AC68P-66
	3/8 X 1/4 MPT 90º Elbow	AC169P-64
	3/8 X 3/8 MPT 90º Elbow	AC169P-66
	3/8 X 1/4 FPT	AC66P-64
	3/8 TUBE X 3/8 TUBE	AC62P-6
Menders	1/16	AC178-0101
	3/16	AC178-0303
	1/4	AC178-0404
	3/8	AC178-0606
	1/2	AC178-0808
	3/4	AC178-1212
Check Valve	1/16	AC178-010X

Size	Part Number	Bag Qty	Size	Part Number	Bag Qty
1/4	0507	500	3/4	1720	100
5/16	0709	500	13/16	1922	100
7/16	0911	500	7/8	2023	100
1/2	1113	500	15/16	2225	100
9/16	1315	500	1	2327	100
5/8	1518	500			

Low Profile Clamp	Part Number
14.5 MM	0145-905
16 MM	0160-905
18 MM	0180-905
18.5 MM	0185-905

ACUMEN TECHNOLOGIES, INC.

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